OSPE 2026

Chapter ② (study designs)

Slide 1

① What is the study design?

② What is its type?

③ What is its importance?

④ **What are the limitations?** It is of limited value in epidemiologic research as:

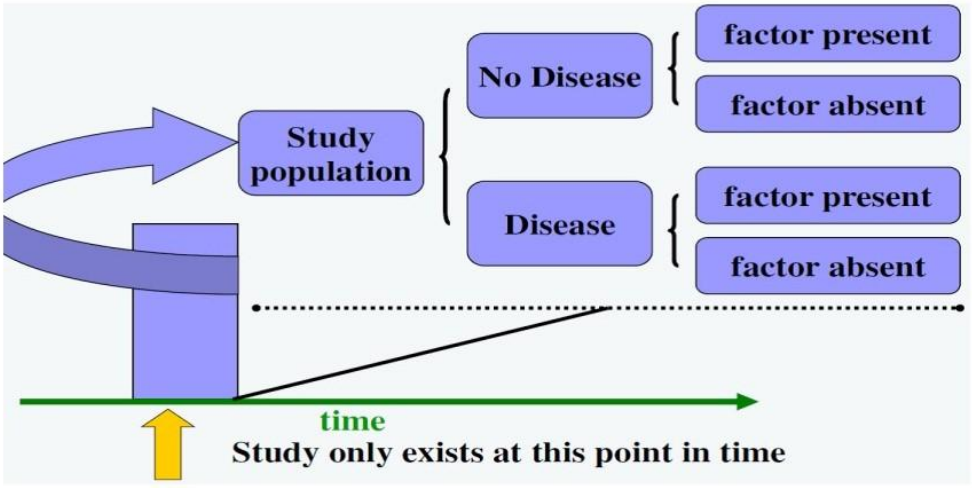
① Cases may not be generalizable

② Not based on systematic studies

③ Causes or associations may have other explanations

④ Are considered the lowest level of evidence.

Slide 2



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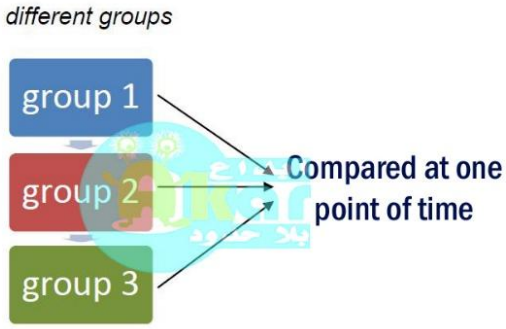

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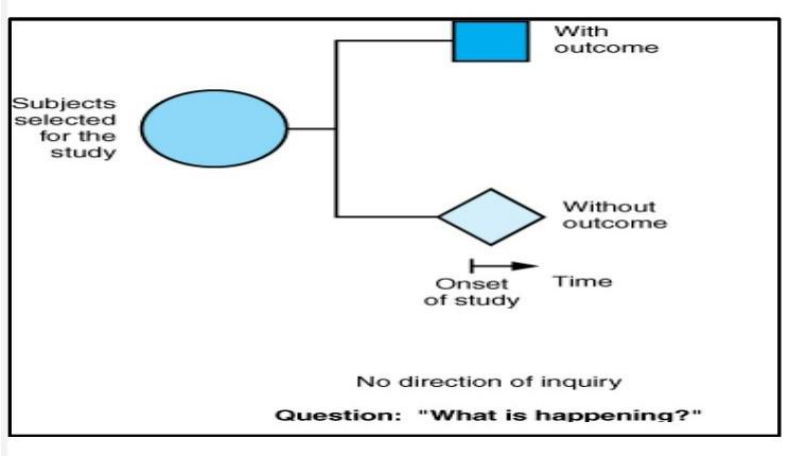


⑤ What is the study design in the slide 2, 3, 4?

⑥ What is its type?

⑦ Mention two measurements in this study design?

⑧ Advantages & disadvantages?

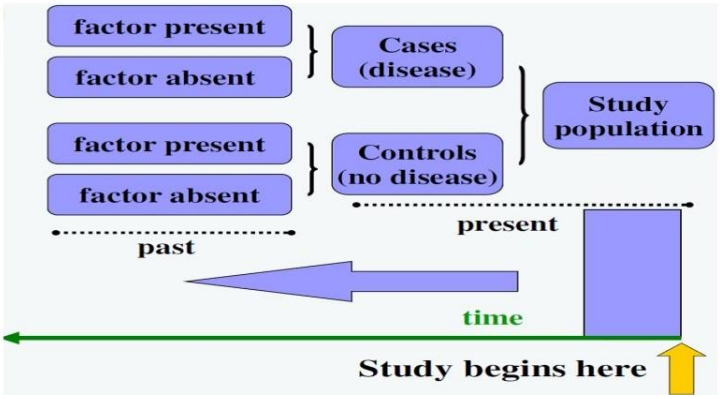
Slide 5

⑨ A researcher conducts a cross-sectional study to estimate the prevalence of asthma among adults in a small town. She randomly selects **2,000 adults** to participate in the study. During data collection, she finds that **160 individuals currently have asthma**.

⊙ **Question:** What is the prevalence of asthma in this population?

Chapter ③ (Case-control study)

Slide 6



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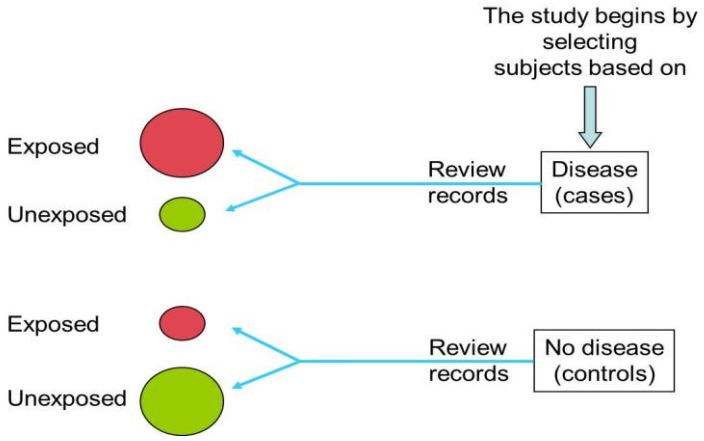
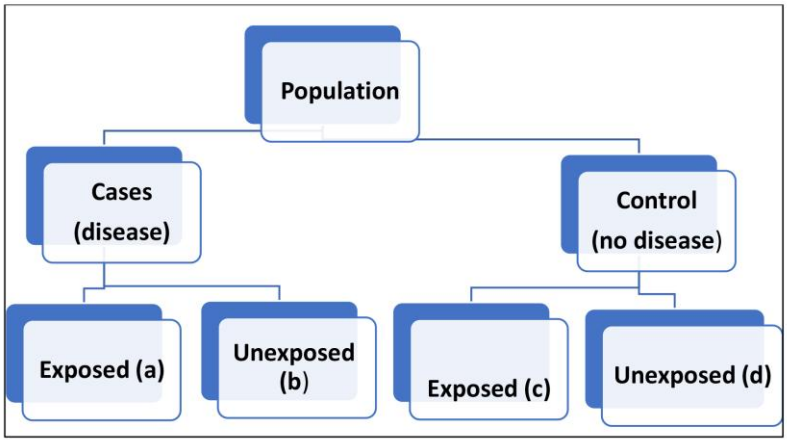


Slide 8



10. What is the study design in the slide 6, 7, 8?
11. What is its type?
12. What are its uses?

13. How cases will be identified?
14. How to do matching?
15. Number of controls?
16. What is the benefit of using more than one control per case?
17. How to collect information on exposure?
18. Advantages & disadvantages?

Slide 9

Smoking	Cases of lung cancer	Control	Total
Yes	130	30	160
No	90	200	290
Total	220	230	450

In this case control study, the researcher wants to find if there is association between smoking and lung cancer.

19. Calculate the risk estimate.
20. Interpret the results.

Slide 10

This is the results of case control study

Exposure	Measles	No measles	Total
No vaccine	**70**	**20**	**90**
Vaccine	**30**	**180**	**210**
Total	**100**	**200**	**300**

21. Calculate the risk estimate.
22. Interpret the results.

Slide 11

⊙ A researcher performed a case–control study on 700 participants to investigate whether **heavy caffeine consumption** is associated with **recurrent panic attacks**. He enrolled 200 people **with** recurrent panic attacks and people **without** recurrent panic attacks. From history:

- ☑ 130 of the cases reported heavy caffeine consumption.
- ☑ 300 of the controls did not report heavy caffeine consumption.

23. Calculate the Odds Ratio (OR) for the association between heavy caffeine consumption and recurrent panic attacks.

24. Interpret the result in plain language.

Slide 12

⊙ A hospital-based case–control study was performed to examine whether having received this season's influenza vaccine is associated with reduced risk of hospitalization for laboratory-confirmed severe influenza. Investigators enrolled 240 patients who were hospitalized with lab-confirmed severe influenza and 480 patients admitted to the same hospitals for conditions unrelated to respiratory infection. During the interview, 36 of the cases reported receiving this season's influenza vaccine, while 192 of the controls reported vaccination.

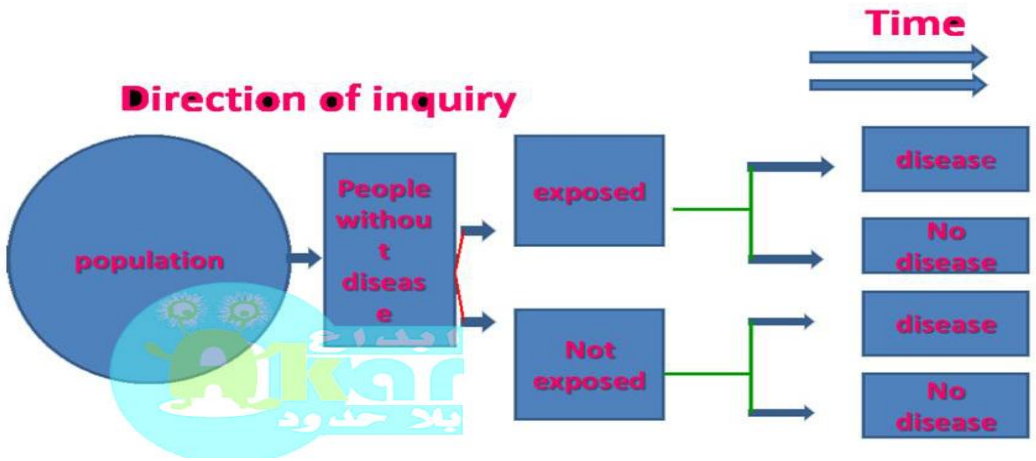
⊙ Using the information above, construct the 2×2 table (exposed = received vaccine, unexposed = not vaccinated).

25. Calculate the odds ratio for the association between vaccination and hospitalization for severe influenza.

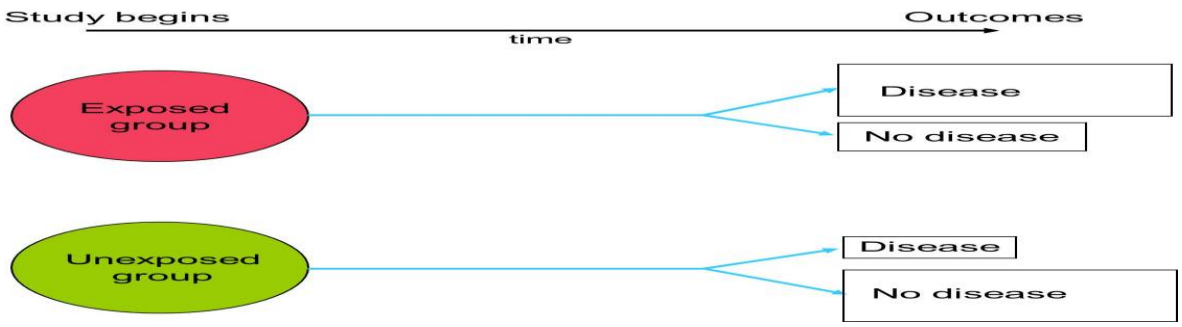
26. Interpret the result in plain language.

Chapter ④ (Cohort study)

Slide 13



Slide 14



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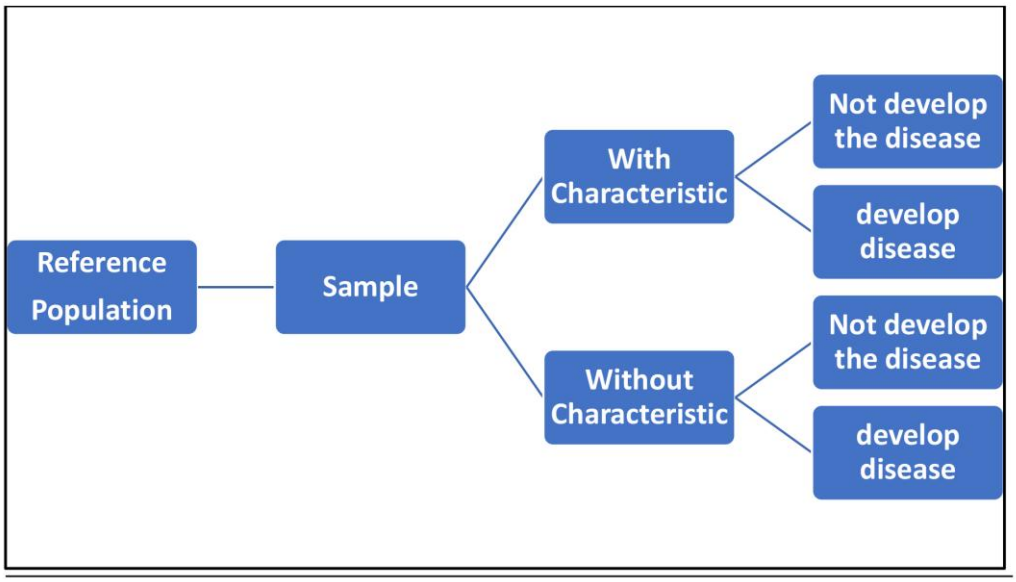

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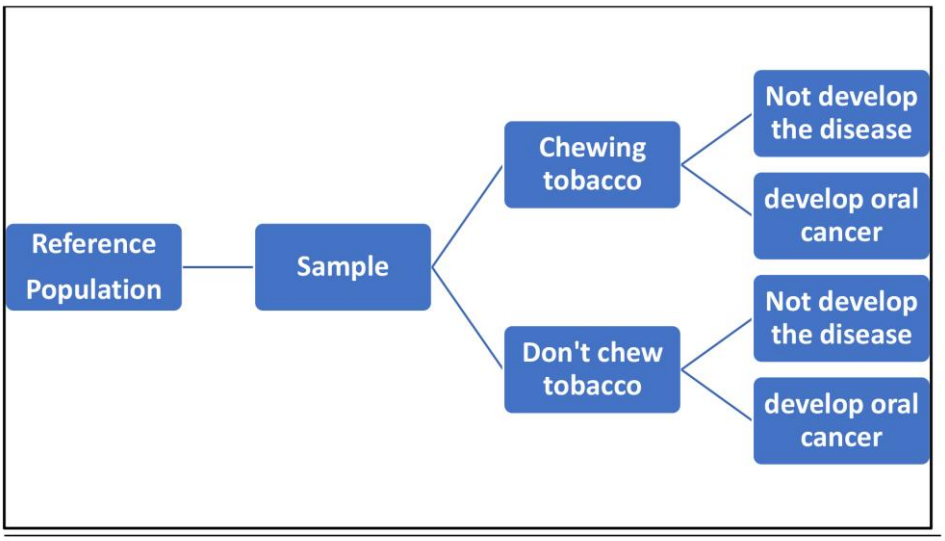
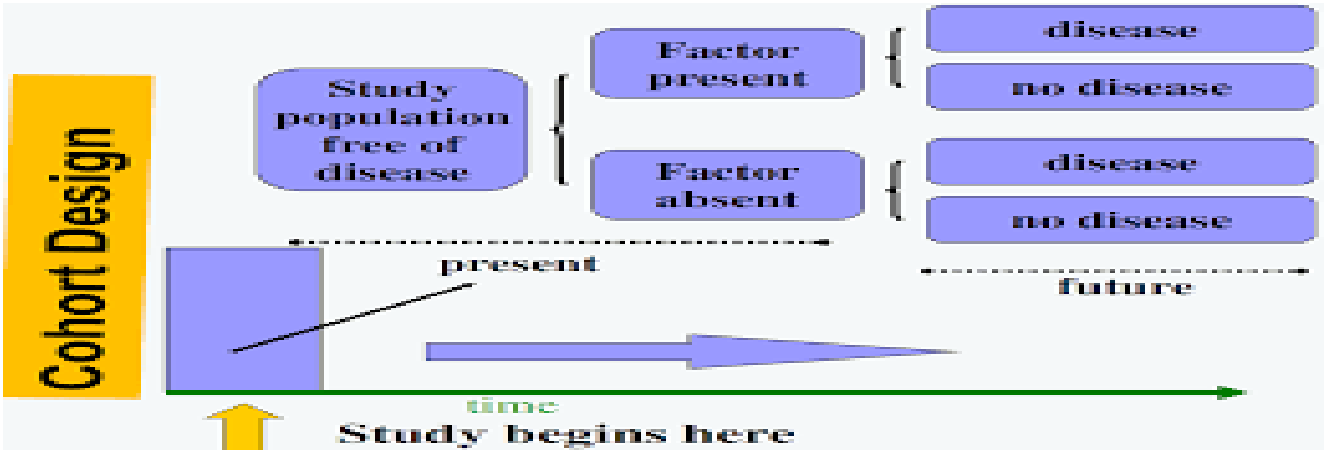
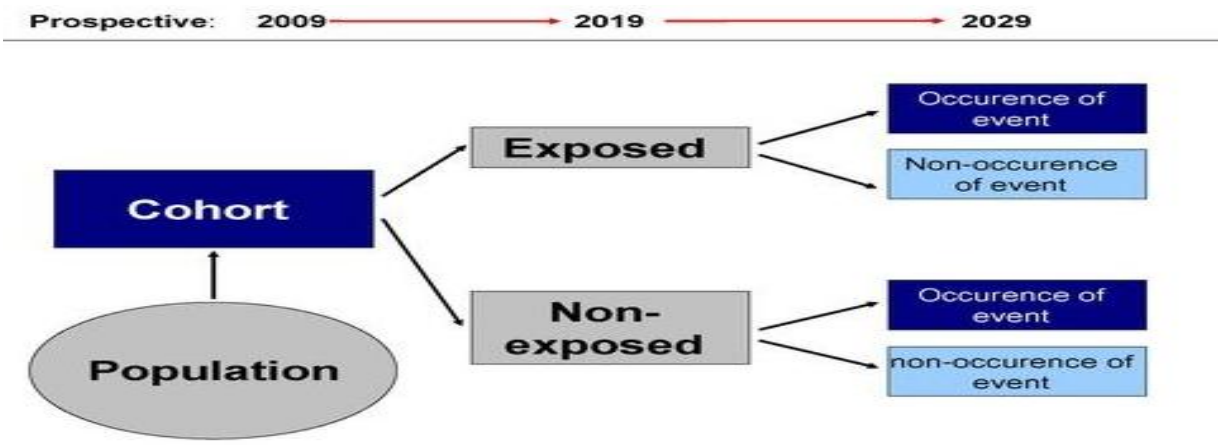


Slide 17



27. What is the study design in the slide 13, 14, 15, 16, 17?
28. What is its type?
29. Which data we need to collect in this study design?
30. Methods of data collection?
31. Advantages & disadvantages?

Slide 18



32. What is the study design?
33. Advantages & disadvantages?

Slide 19

This is the results of cohort study

Exposure	Lung cancer	No lung cancer	Total
Smoking	36	12	48
No smoking	3	27	30
Total	39	39	78

34. Calculate the relative risk.
35. Give your interpretation.

Slide 20

⊙ Investigators conducted a **prospective cohort study** to examine whether exposure to heavy traffic air pollution increases the risk of developing asthma among adults.

They enrolled **3,000 adults** who were free of asthma at baseline and divided them based on residence:

- **High-pollution area (Exposed):** 1,200 adults
- **Low-pollution area (Non-exposed):** 1,800 adults

Participants were followed for **5 years**.

During follow-up:

- In the **exposed group**, **96 people developed asthma**.
- In the **non-exposed group**, **54 people developed asthma**.

Assume that in the exposed group, the total **person-time accumulated = 5,400 person-years**, and in the non-exposed group, total **person-time = 8,900 person-years**.

Required:

36. Calculate the **cumulative incidence** in each group.
37. Calculate the **incidence density (person-time incidence)** in each group.
38. Calculate the **Relative Risk (RR)**.
39. Calculate the **Attributable Risk (Risk Difference)**.

Slide 21

⊙ **In a prospective study of the relationship bet. COCs use & the subsequent risk of developing endometrial cancer, a cohort of 1000 women were followed for 5 years. Results were as follows :**

A 245	**B 75**
C 50	**D 630**

A + C = 295 B + D = 705 n = 1000

40) What is the absolute risk of endometrial cancer among who didn't use COCs ?

a. 630 / (50 + 630)
b. 75 / (245 + 75)
c. 50 / (50 + 630)
d. 245 / (245 + 75)
e. Insufficient data

41) In the previous question, what was the absolute risk of endometrial cancer among women who used COCs ?

a. 630 / (50 + 630)
b. 75 / (245 + 75)
c. 50 / (50 + 630)
d. 245 / (245 + 75)
e. Insufficient data

42) In the question above, what is absolute risk of endometrial cancer among women who used COCs in person-years? If the study was carried out for five years.

a. 630 / (680 x 5)
b. 75 / (320 x 5)
c. 50 / (630 x 5)
d. 75 / (320 + 5)
e. 245 / (320 x 5)

43) In the question above, what is RR in study?

a. [75 / (245 + 75)] / [50 / (50 + 630)]
b. [75 / (245 + 75)] / [630 / (50 + 630)]
c. [50 / (245 + 50)] / [630 / (75 + 630)]
d. [245 / (245 + 75)] / [50 / (50 + 630)]
e. Insufficient data

Slide 22

⊙ **Breast Cancer Present Absent A 300 B 200 C 100 D 400 A + C = 400 B + D = 600 n = 1000 In a cohort study concerning the relationship between the use of exogenous estrogens and the subsequent risk of breast cancer, a sample of 1000 premenopausal women were followed for 8 years.**

44) The absolute risk of blood cancer among women receiving estrogen therapy is :

a. 0.2 b. 0.3 c. 0.4 d. 0.6 e. 0.8

45) Absolute risk of breast cancer among women who did not receive estrogen therapy is

a. 0.05 b. 0.2 c. 0.4 d. 0.6 e. 0.8

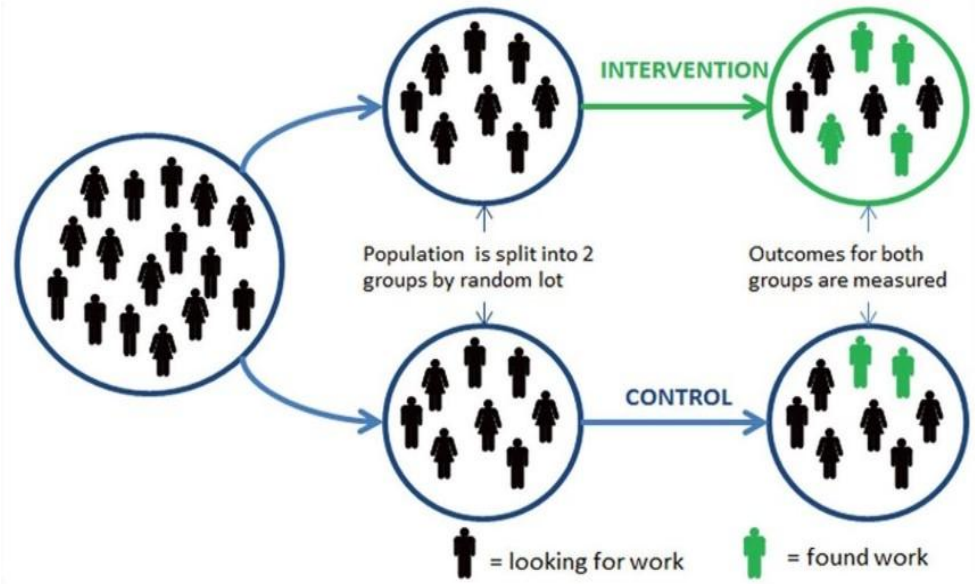
46) The relative risk associated with estrogen therapy in this study is

a. 0.25
b. 0.33
c. 0.5
d. 2
e. 3

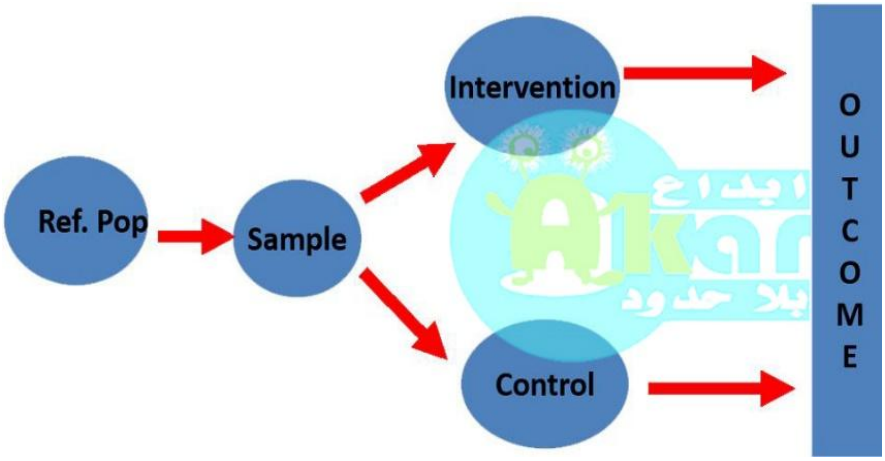
47) The attributable risk associated with estrogen therapy in this study is:

a. 0.05 b. 0.2 c. 0.42 d. 0.75 e. 0.8

Slide 23

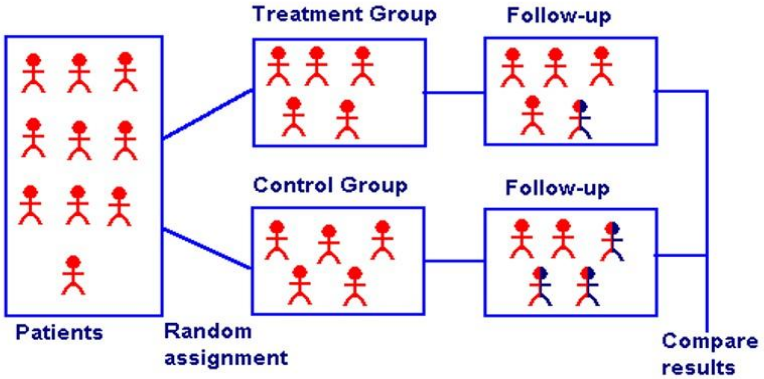

INTERVENTION
Population is split into 2 groups by random lot
Outcomes for both groups are measured
CONTROL
= looking for work
= found work

Slide 24



Slide 25

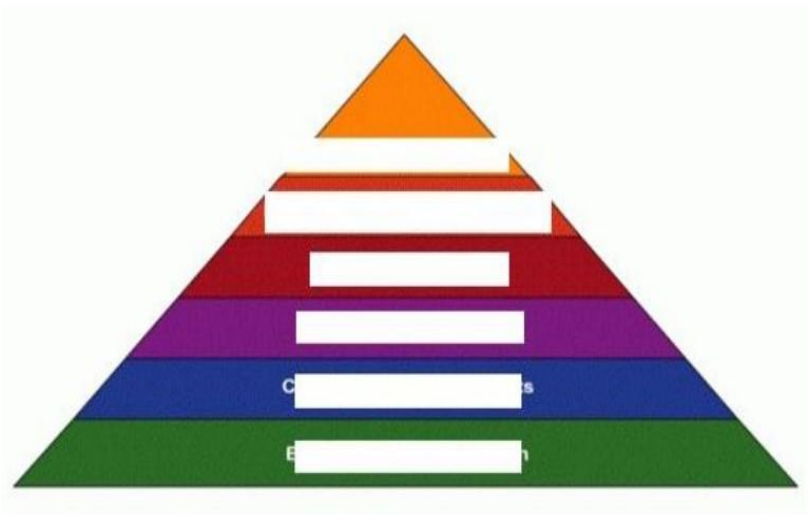
Randomized Controlled Trials



48. What is the study design in the slide 23, 24, 25?
49. Control of confounding
50. Elements of true experiments
51. Types of true experimental studies
52. Types of clinical trials
53. Enumerate types of blinding.
54. Advantages & disadvantages of randomized clinical trials

Chapter ⑥ (Systematic review)

Slide 26



55. This pyramid represents the hierarchy of evidence for the different study designs, which of the following studies represents **the base** (the least powerful designs to prove causality)?

    a. Case control
    b. Prospective Cohort
    c. Case series
    d. Systematic review

56. Which of the following study designs provides the **strongest evidence for causality**?

    A. Case series
    B. Cross-sectional study
    C. Prospective cohort study
    D. Systematic review of randomized controlled trials

57. Which study design typically occupies the level **just above case series** in the hierarchy of evidence?

A. Ecological study B. Case–control study

C. Randomized controlled trial D. Meta-analysis

58. In the hierarchy of evidence, **cohort studies** are considered stronger than case–control studies mainly because they:

A. Are always randomized

B. Measure disease prevalence

C. Can calculate incidence and relative risk

D. Do not require a control group

59. Which of the following statements about **systematic reviews** is TRUE?

A. They are weaker than individual randomized controlled trials

B. They are located at the base of the evidence pyramid

C. They summarize results from multiple primary studies

D. They cannot assess causality

60. Which study design is **most vulnerable to bias** and provides **the least evidence for causality**?

A. Prospective cohort study B. Case–control study

C. Randomized controlled trial D. Case series

61. If a researcher wants to **generate a new hypothesis** rather than test one, which study design from the pyramid is most appropriate?

A. Systematic review B. Randomized controlled trial

C. Case series D. Prospective cohort study

62. Which of the following correctly orders study designs from **lowest to highest level of evidence**?

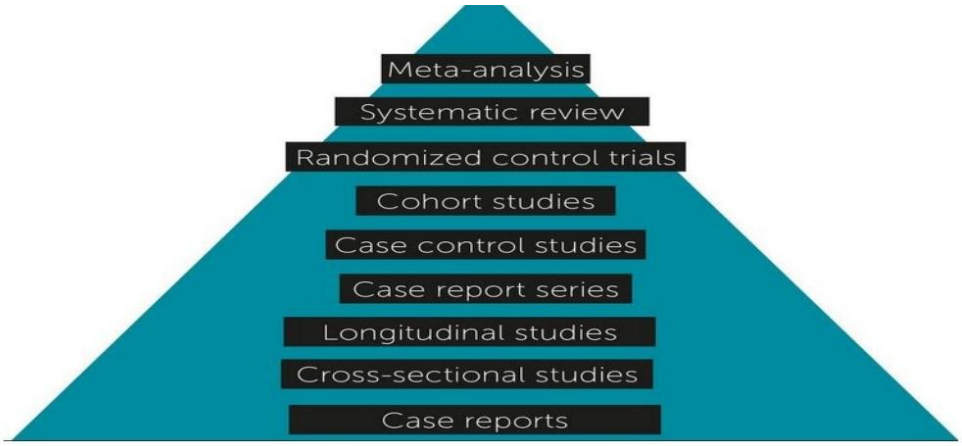
A. Case series → Case–control → Cohort → Systematic review

B. Case–control → Case series → Cohort → RCT

C. Cohort → Case–control → Case series → Systematic review

D. Case series → Cohort → Case–control → Systematic review

Slide 27



63. In this pyramid for the hierarchy of evidence among the different study designs; Stratify the studies **from the most powerful to the least powerful** studies in proving causality.

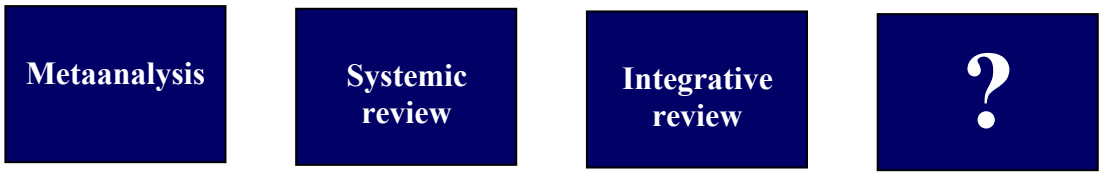
A. RCT, meta analysis, systematic review, cohort study

B. Meta analysis, systematic review, RCT, cohort

C. Systematic review, meta analysis, RCT, cohort

D. RCT, systematic review, meta analysis, cohort

Slide 28



64. This diagram represents the types of systematic reviews. Write the name of the missed type?

65. **What is the difference between systematic reviews & integrative reviews?**

⊙ **Systematic reviews** include only quantitative, experimental studies, and many times only randomized controlled trials.

⊙ **Integrative reviews** include both quantitative & qualitative studies, or, in other words, both experimental & non-experimental studies.

Slide 29

66. A clinician wants to determine whether smoking increases the risk of developing chronic obstructive pulmonary disease (COPD) among middle-aged adults. **Convert this problem into a PECO question.**

- ⊙ **P (Population):** Middle-aged adults
- ⊙ **E (Exposure):** Cigarette smoking
- ⊙ **C (Comparison):** Non-smokers (or adults not exposed to cigarette smoking)
- ⊙ **O (Outcome):** Development of chronic obstructive pulmonary disease (COPD)

⊙ **Among middle-aged adults, does cigarette smoking, compared with non-smoking, increase the risk of developing chronic obstructive pulmonary disease (COPD)?**

67. Researchers are evaluating whether daily vitamin D supplementation reduces the incidence of bone fractures in elderly women. **Convert this problem into a PICO question.**

- ⊙ **P (Population):** Elderly women
- ⊙ **I (Intervention):** Daily vitamin D supplementation
- ⊙ **C (Comparison):** No vitamin D supplementation (placebo or standard care)
- ⊙ **O (Outcome):** Incidence of bone fractures

⊙ **In elderly women, does daily vitamin D supplementation, compared with no supplementation, reduce the incidence of bone fractures?**

68. A public health team wants to assess whether obesity increases the risk of type 2 diabetes in adults aged 30–60 years. **Convert this problem into a PECO question.**

⊙ **P (Population):** Adults aged 30–60 years
⊙ **E (Exposure):** Obesity
⊙ **C (Comparison):** Non-obese adults
⊙ **O (Outcome):** Development (risk) of type 2 diabetes mellitus

⊙ **Among adults aged 30–60 years, does obesity, compared with non-obesity, increase the risk of developing type 2 diabetes mellitus?**

69. A psychiatrist wants to compare cognitive behavioral therapy (CBT) with pharmacological treatment in reducing generalized anxiety symptoms. **Convert this problem into a PICO question.**

⊙ **P (Population):** Patients with generalized anxiety disorder (GAD)
⊙ **I (Intervention):** Cognitive behavioral therapy (CBT)
⊙ **C (Comparison):** Pharmacological treatment (e.g., anxiolytic or antidepressant medication)
⊙ **O (Outcome):** Reduction in generalized anxiety symptoms

⊙ **In patients with generalized anxiety disorder, does cognitive behavioral therapy, compared with pharmacological treatment, lead to a greater reduction in generalized anxiety symptoms?**

70. Environmental researchers want to know whether exposure to high levels of urban air pollution increases the risk of asthma among school-aged children. **Convert this problem into a PECO question.**

⊙ **P (Population):** School-aged children

⊙ **E (Exposure):** High levels of urban air pollution

⊙ **C (Comparison):** Low or no exposure to urban air pollution

⊙ **O (Outcome):** Development (risk) of asthma

⊙ **Among school-aged children, does exposure to high levels of urban air pollution, compared with low or no exposure, increase the risk of developing asthma?**

71. Example of PICO: For Pediatric patients receiving vaccines in the outpatient setting, does aspiration of blood during medication administration prevent injection of medications into blood vessels, as compared to non aspiration of blood?"

⊙ **Population:** Pediatric patients in the outpatient setting

⊙ **Patient Problem:** Injection of vaccines into blood vessels during medication administration

⊙ **Intervention:** Aspiration of blood during injection

⊙ **Comparison:** Non aspiration of blood during injection

⊙ **Outcome:** Prevention of intravascular injection of medications (i.e., avoidance of injection into blood vessels)

Slide 30

JADAD Score Calculation
Item
Was the study described as randomised (this includes words such as randomly, random and randomisation)?
Was the method used to generate the sequence of randomisation described and appropriate (table of random numbers, computer-generated, etc.)?
Was the study described as double blind?
Was the method of double blinding described and appropriate (identical placebo, active placebo, dummy, etc.)?
Was there a description of withdrawals and dropouts?
Deduct one point if the method used to generate the sequence of randomisation was described and it was inappropriate (patients were allocated alternately, or according to date of birth, hospital number, etc.).
Deduct one point if the study was described as double blind but the method of blinding was inappropriate (e.g., comparison of tablet vs. injection with no double dummy).
Total Score

72. The Jadad scale primarily evaluates which of the following?

A. RCTs.
B. Observational studies.
C. Systematic review.
D. Any study design.

73. The Jadad scale primarily evaluates which of the following domains?

A. Sample size calculation, attrition bias, and reporting bias
B. Randomization, blinding, and withdrawals/dropouts
C. Allocation concealment and intention-to-treat analysis only
D. External validity and applicability to clinical settings

Slide 31

Enhancing the quality and transparency of health research

① **Jadad scale & CONSORT** Statement (reporting of RCTs)

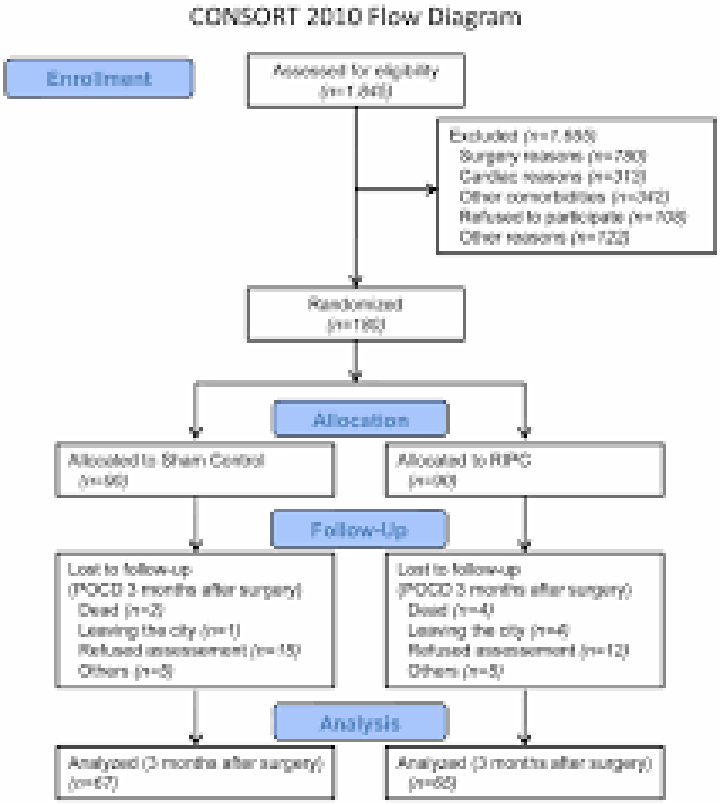
② **STARD** (reporting of diagnostic accuracy studies)

③ **STROBE** (reporting of observational studies).

④ **PRISMA** (reporting of systematic reviews)

⑤ **MOOSE** (reporting of meta-analyses of observational studies)

⑥ **CASP** checklist to appraise critically the quality of any study design



74. The CONSORT flow diagram is mainly used to:

A. Assess publication bias in meta-analysis

B. Describe the flow of participants through stages of an RCT

C. Evaluate risk of bias in observational studies

D. Summarize heterogeneity between studies

Slide 32

Variables	Item no.	Recommendation	Reported in (headings)
Title and abstract	1	(a) Indicate the study's design with a commonly used term in title or the abstract	Title page
		(b) Provide in the abstract an informative and balanced summary of what was done and what was found	Abstract section
Introduction			
Background/rationale	2	Explain the scientific background and rationale for investigation being reported	Introduction, paragraphs 1-2
Objectives	3	State specific objectives, including any prespecified hypotheses	Introduction, para. 3
Methods			
Study design	4	Present key elements of study design early in paper	Methods: Study designs and populations section
Setting	5	Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection	Methods: Study designs and populations section
Participants	6	(a) Give the eligibility criteria, and sources and methods of selection of participants.	Methods: Study designs and populations section
Variables	7	Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable	Methods: Patient assessment and outcomes section
Data sources/ measurement	8*	For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe comparability of assessment methods if there is more than 1 group	We analyzed the medical charts of Renal anaemic patients
Bias	9	Describe any efforts to address potential sources of bias	Statistical analysis

75. The STROBE checklist is designed to improve the reporting of which study designs?

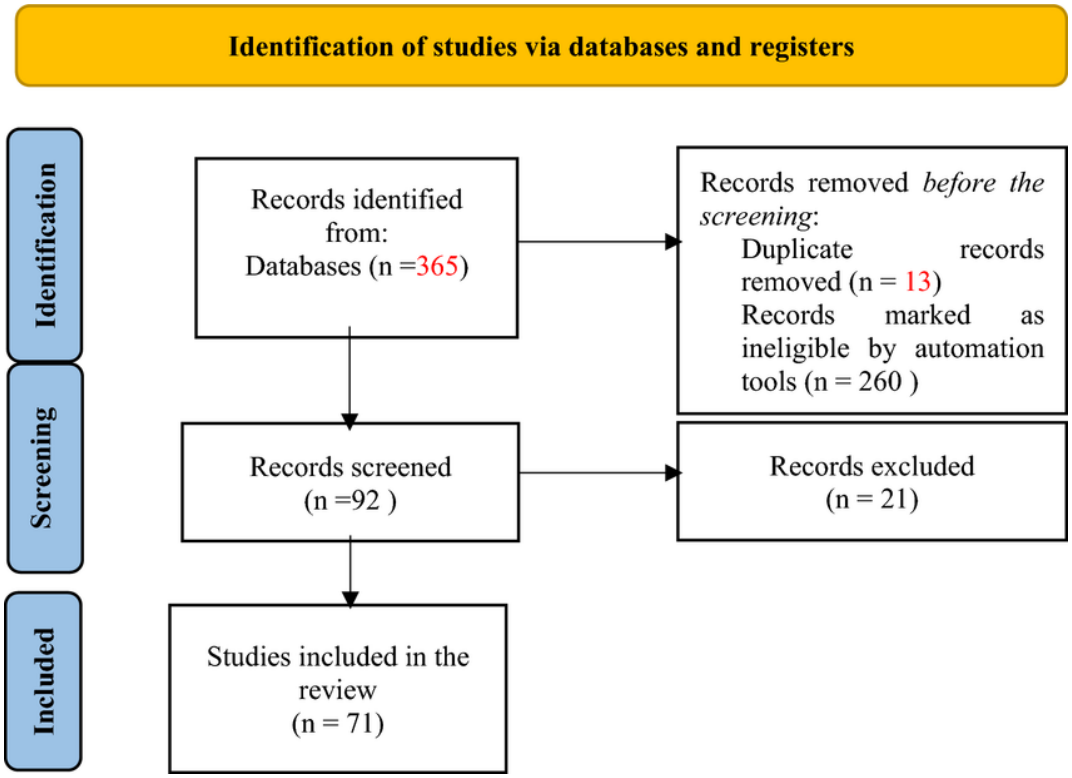
A. Randomized controlled trials only

B. Systematic reviews and meta-analyses

C. Cohort, case–control, and cross-sectional studies

D. Qualitative research studies

Slide 33


Identification of studies via databases and registers
Identification
Screening
Included
Records identified from: Databases (n =365)
Records removed *before the screening*: Duplicate records removed (n = 13) Records marked as ineligible by automation tools (n = 260)
Records screened (n =92)
Records excluded (n = 21)
Studies included in the review (n = 71)

76. The PRISMA flow diagram primarily evaluates which of the following?

A. RCTs.

B. Observational studies.

C. Systematic review.

D. Any study design.

Table 2d. Critical Appraisal Skills Programme (CASP) checklist for cohort studies

No	Question	Hoffman et al (2014)
Q1	Did the study address a clearly focused issue?	Yes
Q2	Was the cohort recruited in an acceptable way?	Yes
Q3	Was the exposure accurately measured to minimise bias?	Yes
Q4	Was the outcome accurately measured to minimise bias?	Yes
Q5a	Have the authors identified all important confounding factors?	Yes
Q5b	Have they taken account of the confounding factors in the design and/or analysis?	Yes
Q6a	Was the follow up of subjects complete enough?	Yes
Q6b	Was the follow up of subjects long enough?	Yes
Q7	What are the results of this study?	See below
Q8	How precise are the results?	See below
Q9	Do you believe the results?	Yes
Q10	Can the results be applied to the local population?	Yes
Q11	Do the results of the study fit with other available evidence?	Yes
Q12	What are the implications of this study for practice?	See below

Q7 88% adherence rate; exercise tolerance at week 1 48.7%; exercise tolerance at week 16 93%

Q8 Results subjective to participant's experience and perceived self-efficacy. No confidence intervals noted; substantial risk of bias

Q12 Study researchers concluded that the use of a virtual reality rehabilitation programme at home was beneficial for both the physical and emotional recovery of patients post-thoracotomy

77. The CASP tool is primarily used to:

A. Measure sample size adequacy in RCTs

B. Critically appraise the validity, results, and relevance of any study design

C. Perform statistical analysis of observational data

D. Generate systematic review protocol templates

Slide 35

78. Mention five Bibliographic databases [PubMed, Embase, Cochrane library, Web of science, CINAHL].

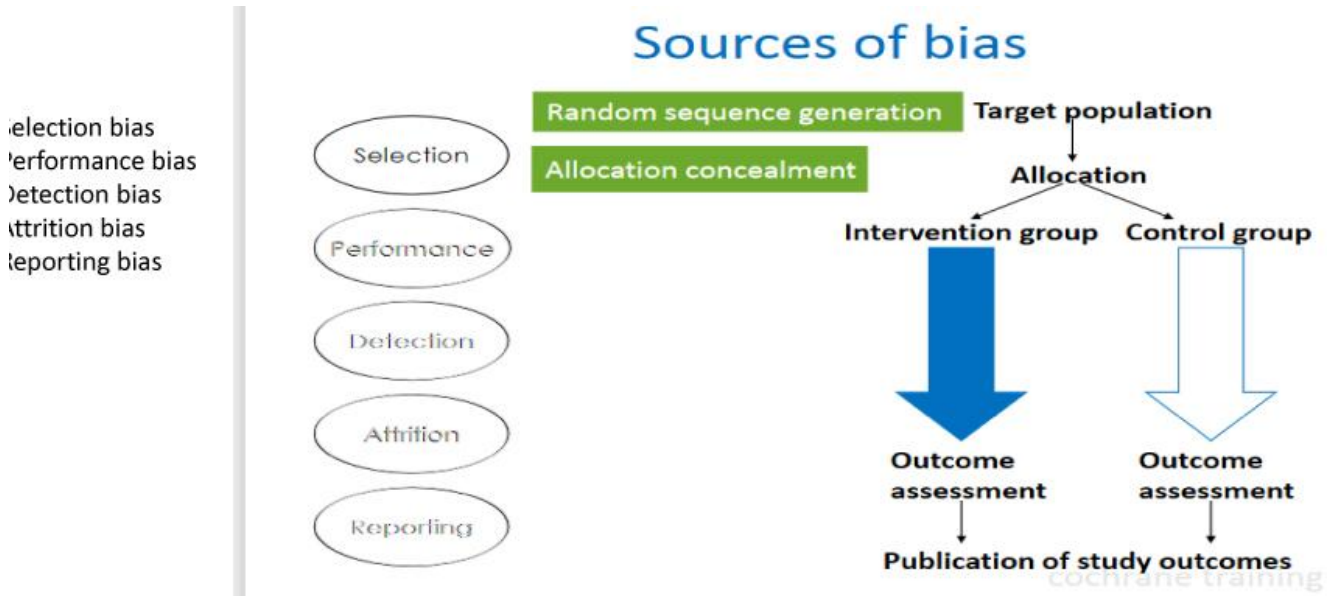
Slide 36

⊙ Search engines : List of Top 12 Best Search Engines in The World :

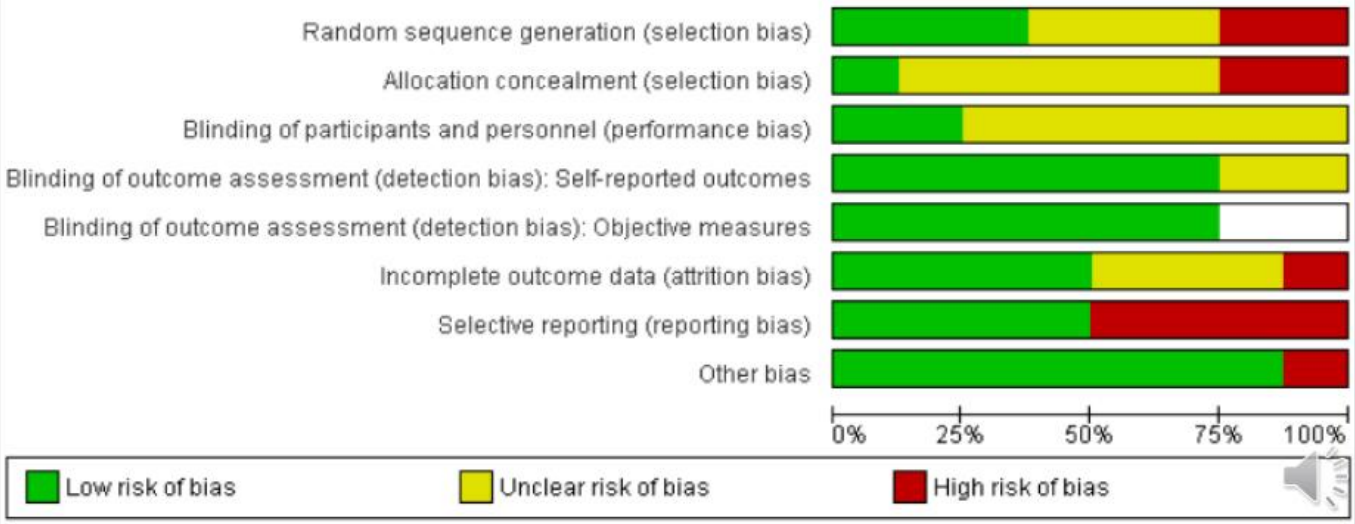
- ☑ **Google.** Google Search Engine is the best search engine in the world
- ☑ **Bing.** Bing is Microsoft's answer to Google and it was launched in 2009. ...
- ☑ **Yahoo.** ...
- ☑ **Baidu.** ... the most used search engine in **China**
- ☑ **AOL. com**... (news, politics, sports)
- ☑ **Ask.com.** ... (in the form in a question you put and you get the answer
- ☑ **Excite.** provides internet services like email, search engine, news, instant messaging and weather updates...
- ☑ **DuckDuckGo.com**
- ☑ **www.wolframalpha.com** (computational intelligence) (for students and educators (can calculates many things as diet for example, Math,. ,,,,
- ☑ **Yandex**.com Used In **Russia**
- ☑ **Lycos.**com (social networking, and entertainment websites.)
- ☑ **ChaCha.**com (used in mobile search and marketing services

Slide 37

Sources of bias as described by Cochrane collaboration :



Risk of bias graph

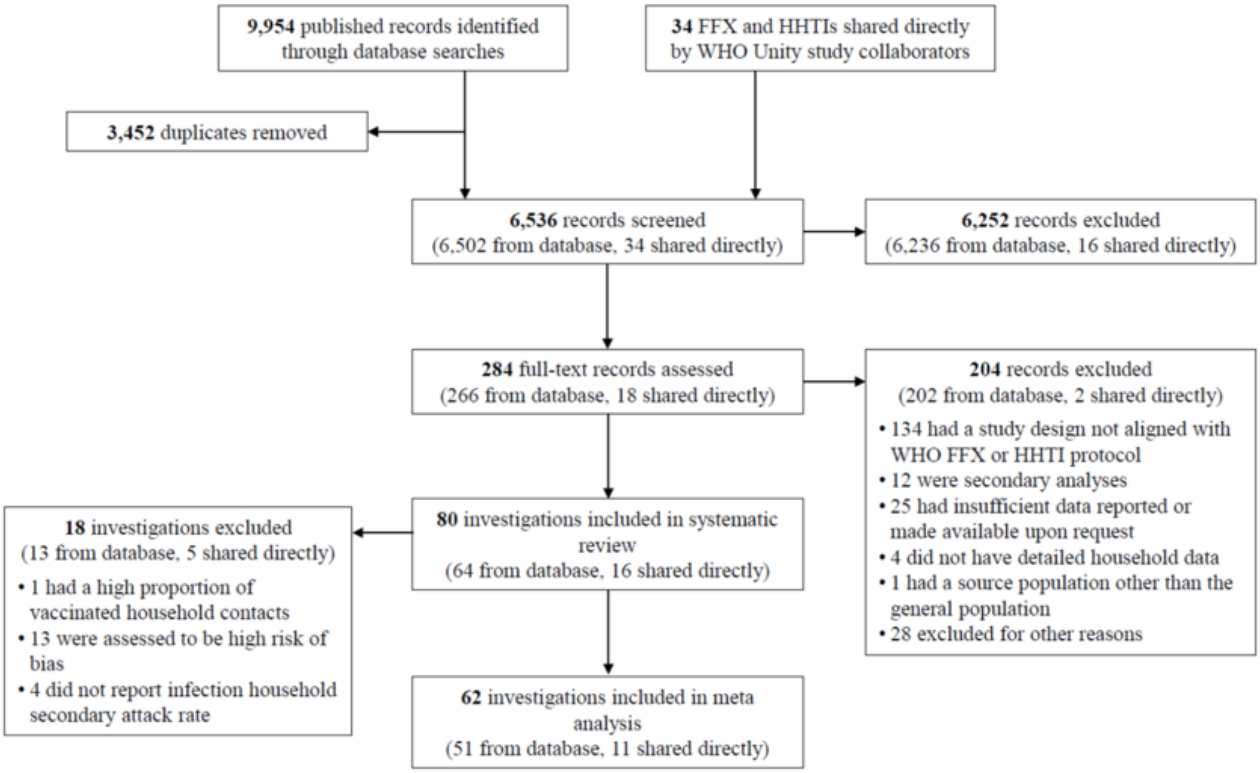


Chapter ⑦ (Meta-analysis)

Slide 39

79. Mention protocols for the reporting of meta-analysis results?

Slide 40


9,954 published records identified through database searches
34 FFX and HHTIs shared directly by WHO Unity study collaborators
3,452 duplicates removed
6,536 records screened (6,502 from database, 34 shared directly)
6,252 records excluded (6,236 from database, 16 shared directly)
284 full-text records assessed (266 from database, 18 shared directly)
204 records excluded (202 from database, 2 shared directly)
• 134 had a study design not aligned with WHO FFX or HHTI protocol
• 12 were secondary analyses
• 25 had insufficient data reported or made available upon request
• 4 did not have detailed household data
• 1 had a source population other than the general population
• 28 excluded for other reasons
18 investigations excluded (13 from database, 5 shared directly)
• 1 had a high proportion of vaccinated household contacts
• 13 were assessed to be high risk of bias
• 4 did not report infection household secondary attack rate
80 investigations included in systematic review (64 from database, 16 shared directly)
62 investigations included in meta analysis (51 from database, 11 shared directly)

80. What is the correct name of the diagram shown in the image?

A. CONSORT flow diagram

B. STROBE checklist diagram

C. PRISMA flow diagram

D. Forest plot

81. What is the main purpose of this diagram in a systematic review and meta-analysis?

A. To calculate effect size

B. To assess risk of bias

C. To document the identification, screening, and selection of studies

D. To summarize study results

82. According to the diagram, how many records were identified through database searches?

A. 6,536
B. 3,452
C. 9,954
D. 284

83. At which stage are studies excluded for reasons such as "study design not aligned with protocol" or "insufficient data reported"?

A. Records identified
B. Records screened
C. Full-text records assessed
D. Meta-analysis stage

84. How many investigations were included in the systematic review but excluded from the meta-analysis?

A. 62
B. 204
C. 18
D. 80

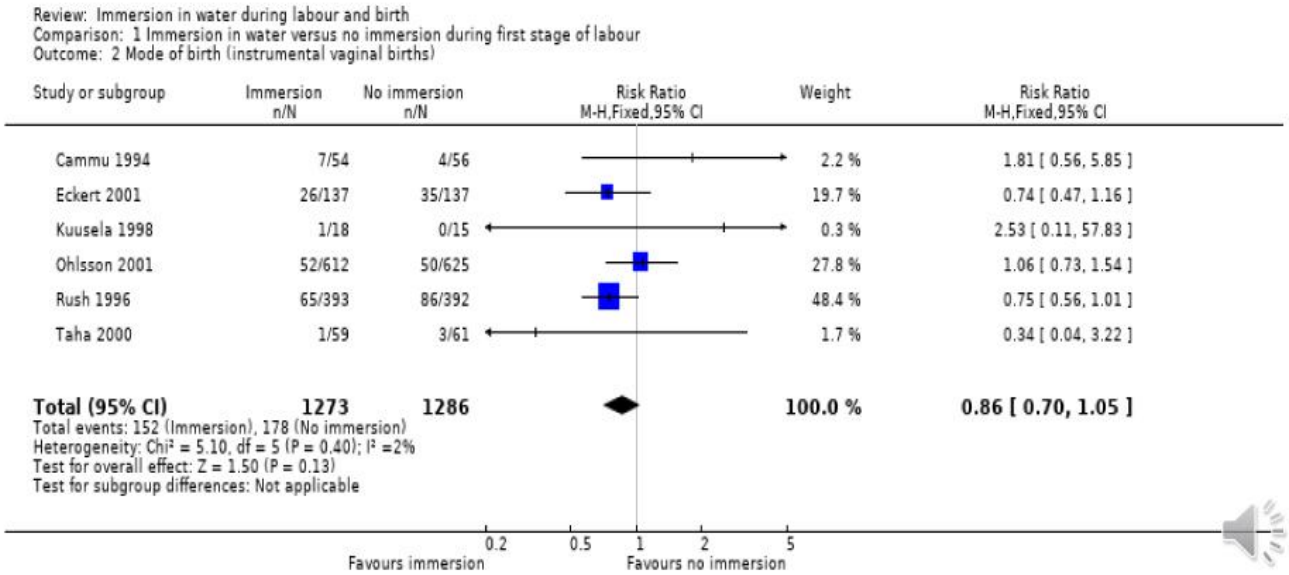
85. Which of the following is a valid methodological reason for excluding a study at a late stage, as shown in the diagram?

A. Negative study results
B. Small sample size only
C. High risk of bias
D. Study published in a local journal

86. Which statement best describes the relationship between systematic review and meta-analysis as illustrated in the diagram?

A. All studies in the systematic review are included in the meta-analysis
B. Meta-analysis is conducted before the systematic review
C. Meta-analysis includes only a subset of studies from the systematic review
D. Both terms refer to the same process

⊙ Forest Plot : is a graphical display of estimated results from a number of studies that are included in a meta analysis


Review: Immersion in water during labour and birth
Comparison: 1 Immersion in water versus no immersion during first stage of labour
Outcome: 2 Mode of birth (instrumental vaginal births)
Study or subgroup
Immersion n/N
No immersion n/N
Risk Ratio M-H,Fixed,95% CI
Weight
Risk Ratio M-H,Fixed,95% CI
Cammu 1994 7/54 4/56 2.2 % 1.81 [0.56, 5.85]
Eckert 2001 26/137 35/137 19.7 % 0.74 [0.47, 1.16]
Kuusela 1998 1/18 0/15 0.3 % 2.53 [0.11, 57.83]
Ohlsson 2001 52/612 50/625 27.8 % 1.06 [0.73, 1.54]
Rush 1996 65/393 86/392 48.4 % 0.75 [0.56, 1.01]
Taha 2000 1/59 3/61 1.7 % 0.34 [0.04, 3.22]
Total (95% CI) 1273 1286 100.0 % 0.86 [0.70, 1.05]
Total events: 152 (Immersion), 178 (No immersion)
Heterogeneity: Chi² = 5.10, df = 5 (P = 0.40); I² =2%
Test for overall effect: Z = 1.50 (P = 0.13)
Test for subgroup differences: Not applicable
0.2
0.5
1
2
5
Favours immersion
Favours no immersion

87. The figure shown represents results from which type of study?

A. Randomized controlled trial

B. Cohort study

C. Systematic review with meta-analysis

D. Case–control study

88. What statistical measure is used to summarize the effect size in this forest plot?

A. Odds ratio

B. Relative risk (Risk ratio)

C. Hazard ratio

D. Mean difference

89. The diamond at the bottom of the forest plot represents:

A. The study with the largest sample size

B. The study with the highest weight

C. The pooled overall effect estimate

D. The heterogeneity of studies

90. The pooled risk ratio is 0.86 (95% CI: 0.70–1.05). This result indicates that:

A. Immersion significantly reduces instrumental vaginal births

B. Immersion significantly increases instrumental vaginal births

C. There is no statistically significant difference between groups

D. The result is invalid due to high heterogeneity

91. Why is the overall result considered not statistically significant?

A. The p-value is greater than 0.05

B. The confidence interval crosses 1

C. The sample size is too small

D. The heterogeneity is too high

92. Which study contributed the largest weight to the meta-analysis?

A. Cammun 1994

B. Kuusela 1998

C. Rush 1996

D. Taha 2000

93. What does a square represent in a forest plot?

A. The pooled effect

B. The confidence interval

C. The point estimate of an individual study

D. The heterogeneity

94. In this forest plot, values to the left of 1 favor:

A. No immersion

B. Immersion in water

C. Instrumental vaginal birth

D. Control group only

Chapter ⑧ (Data collection)

95. Disadvantages of observation as a method of data collection
96. Types of an interview
97. Disadvantages of an interview
98. Disadvantages of a questionnaire
99. Sources of secondary data
100. Disadvantages of using secondary data

Chapter ⑨: Constructing an instrument for data collection

101. Advantages & disadvantages of open-ended questions.
102. Advantages & disadvantages of closed-ended questions.

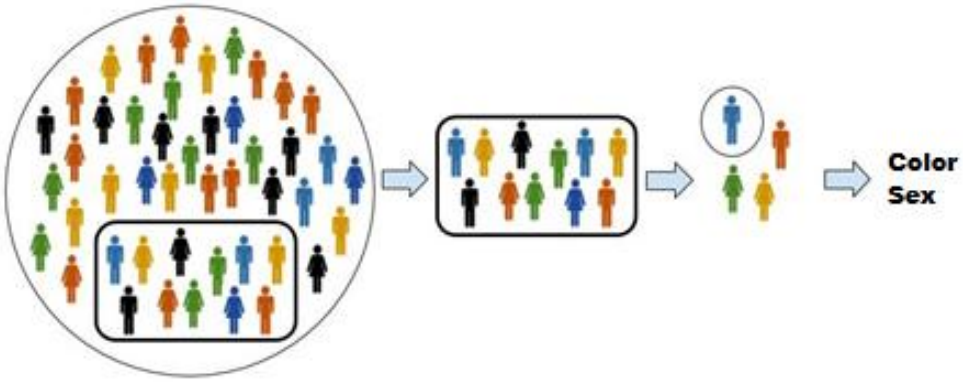
Chapter 11: Population and sampling

بعض النقاط الهامة فى الشابتر

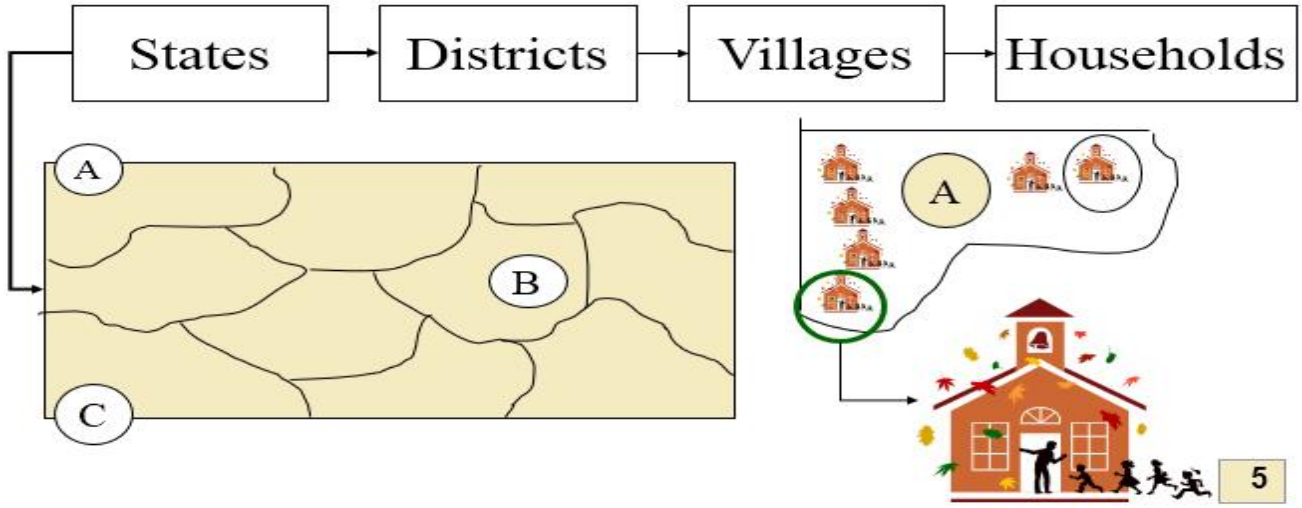
⊙ Advantages of sampling.
⊙ Factors influencing sample representativeness.
⊙ When might you sample the entire population ?
⊙ Enumerate types of probability samples, advantages & disadvantages
⊙ Enumerate types of non-probability samples, advantages & disadvantages
⊙ Snowball sample (كاملة).

Slide 42

103. Recognize and define the four items in the following picture



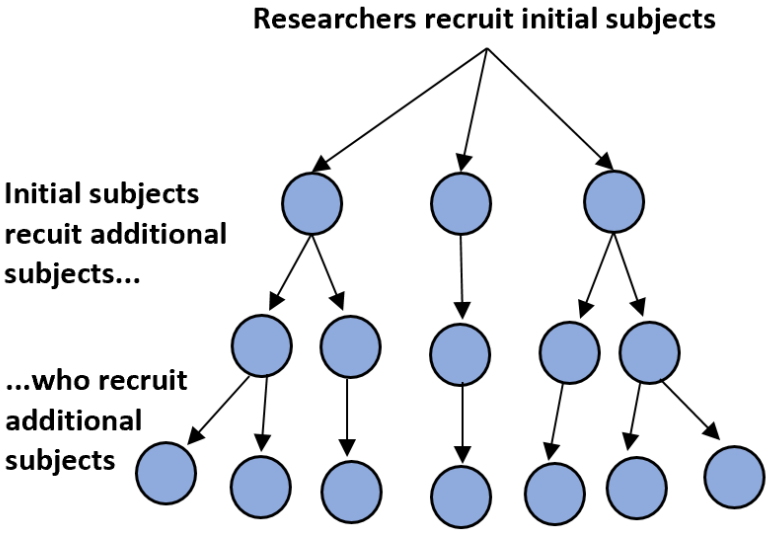
Slide 43



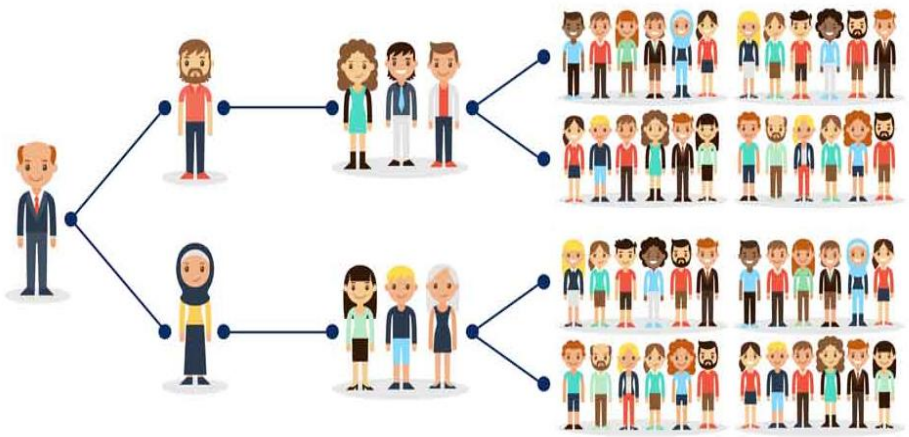
104. What is the type of sample in the picture above?

105. Mention its uses & advantages.

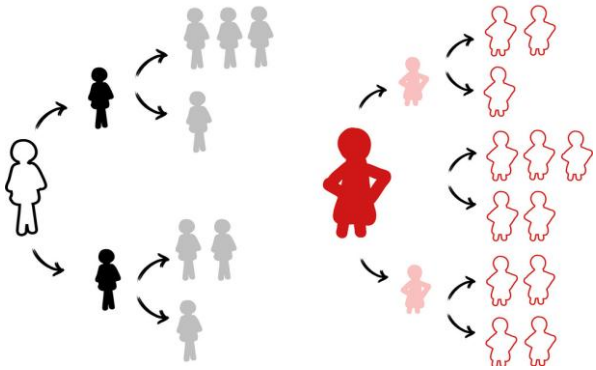
Slide 44


Researchers recruit initial subjects
Initial subjects recuit additional subjects...
...who recruit additional subjects

Slide 45



Slide 46



106. Which type of samples you can detect from the slides 44, 45, 46?

107. Which of the following examples matches with this type of sampling?

A) If there is 10.000 students at certain college & we only interested in achieving a sample size of 100 students. We may simply standing at one of entrance gates, where it would be easy to invite the many students that pass by to take part in the research. So, it is easy (convenient) to select.

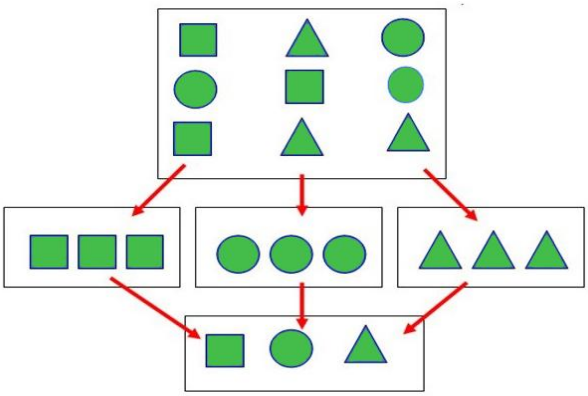
B) Meeting homeless persons, and then asking him to introduce you to other homeless people you might interview

C) Drawing names from a hat, random number tables.

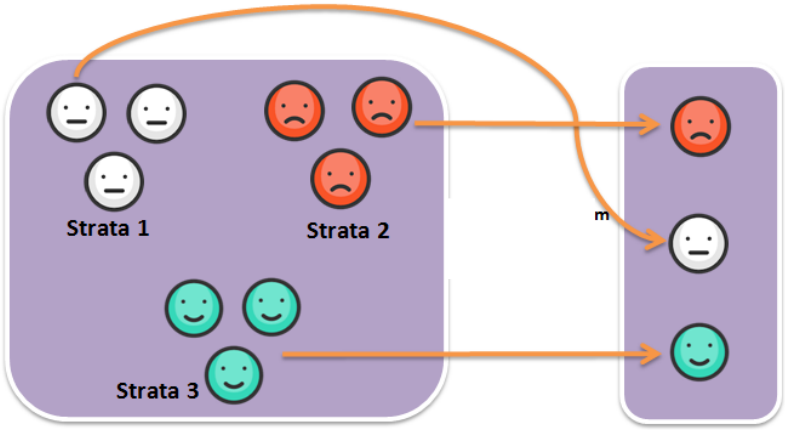
108. Which type of sampling is suitable for the following situation (If researcher are conducting a study of individuals with rare diseases, it may be difficult to find these individuals. However, if they can find just a few initial individuals to be in the study then they can ask them to recruit further individuals they may know through a private support group or through some other means).

109. Which type of sampling is suitable for the following (If researchers are interested in conducting a study of ex-convicts, it could be difficult to find a large sample of people who would be willing to come forward to be in the study. But if researchers can find just a few ex-convicts to be in the study, they could ask each of them to recruit additional people they may know who are also ex-convicts.).

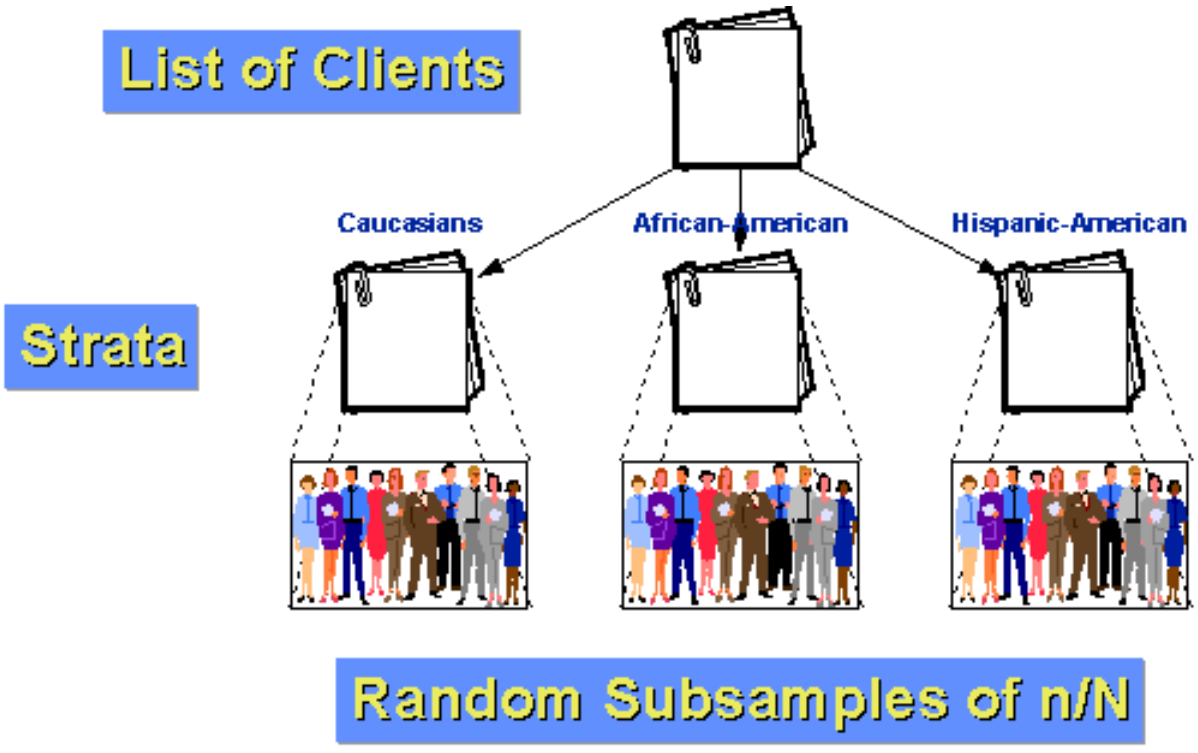
Slide 47



Slide 48



Slide 49



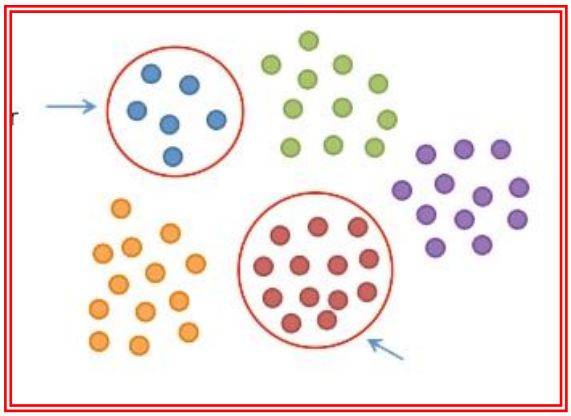
110. Which type of samples you can detect from slides 47, 48, 49 ?

111. Advantages of sampling.

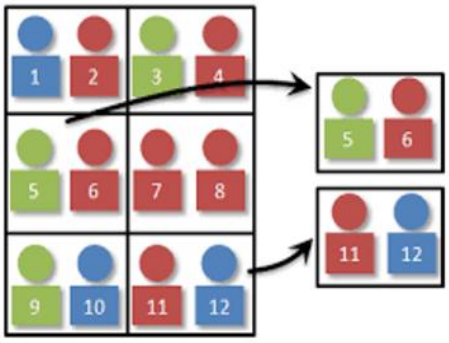
112. Factors influencing sample representativeness

113. When might you sample the entire population?

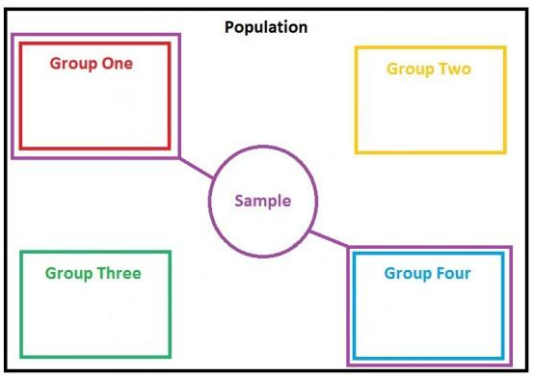
Slide 50



Slide 51



Slide 52

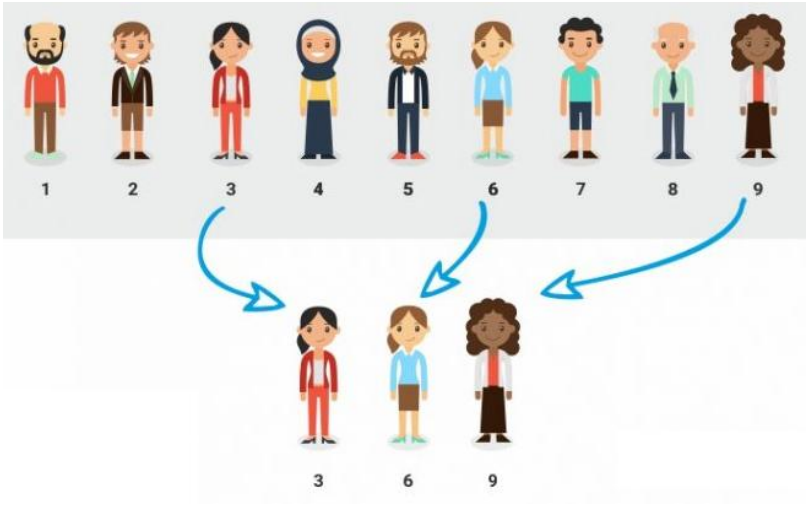


114. Which type of samples you can detect from slides 50. 51, 52?

115. Its types?

116. Advantages & disadvantages.

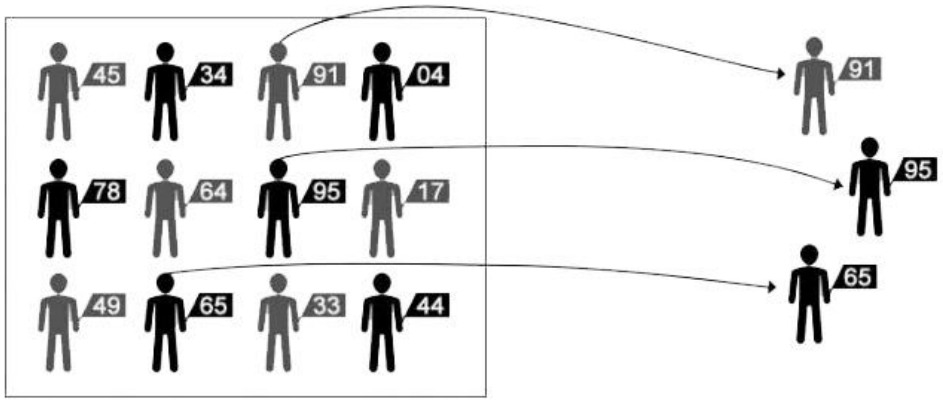
Slide 53



117. Which type of samples you can detect from the above picture ?

118. Advantages & disadvantages?

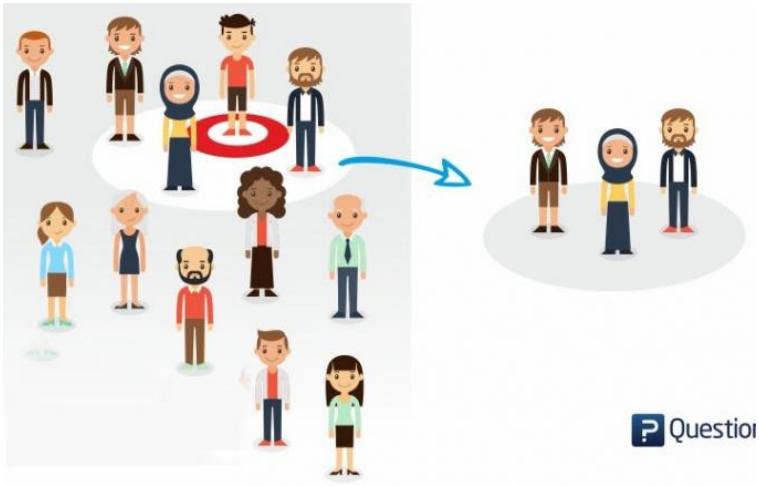
Slide 54



119. Which type of samples you can detect from the above picture ?

120. Advantages & disadvantages?

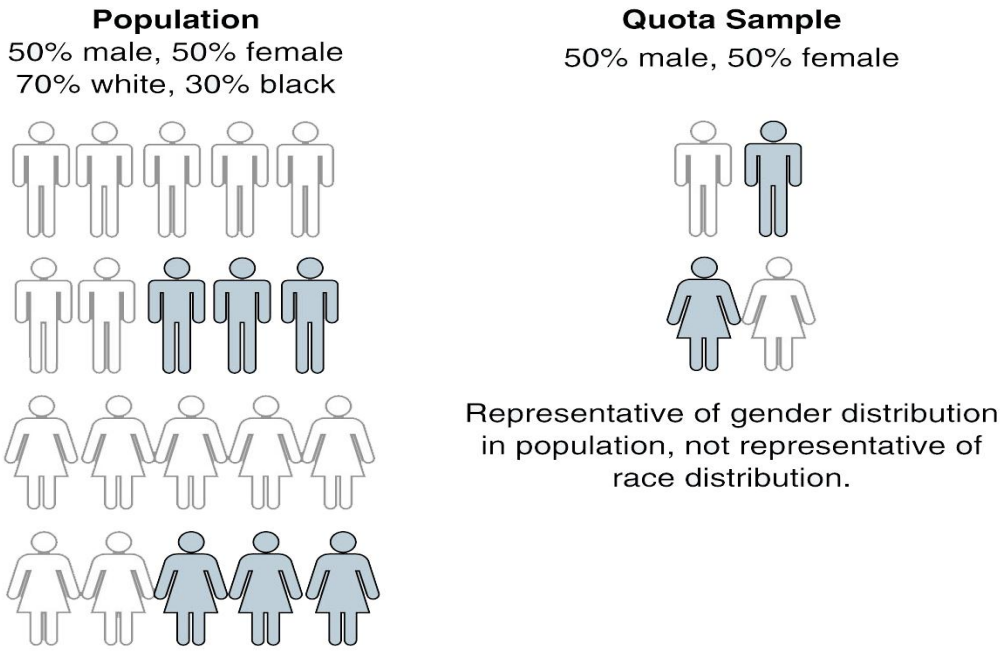
Slide 55



121. Which type of samples you can detect from the above picture ?

122. Advantages & disadvantages?

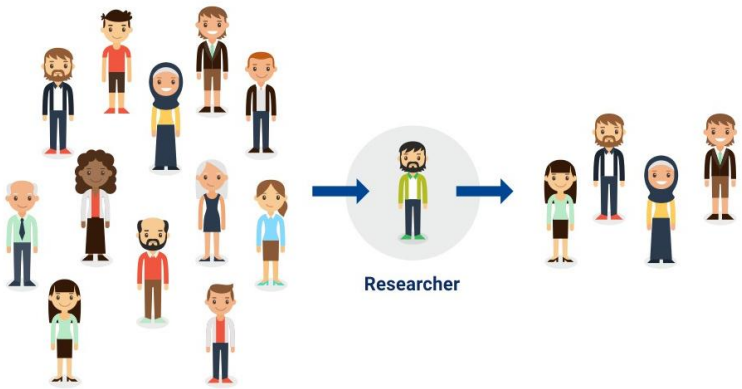
Slide 56


Population
50% male, 50% female
70% white, 30% black
Quota Sample
50% male, 50% female
Representative of gender distribution in population, not representative of race distribution.

123. Which type of samples you can detect from the above picture ?

124. Advantages & disadvantages?

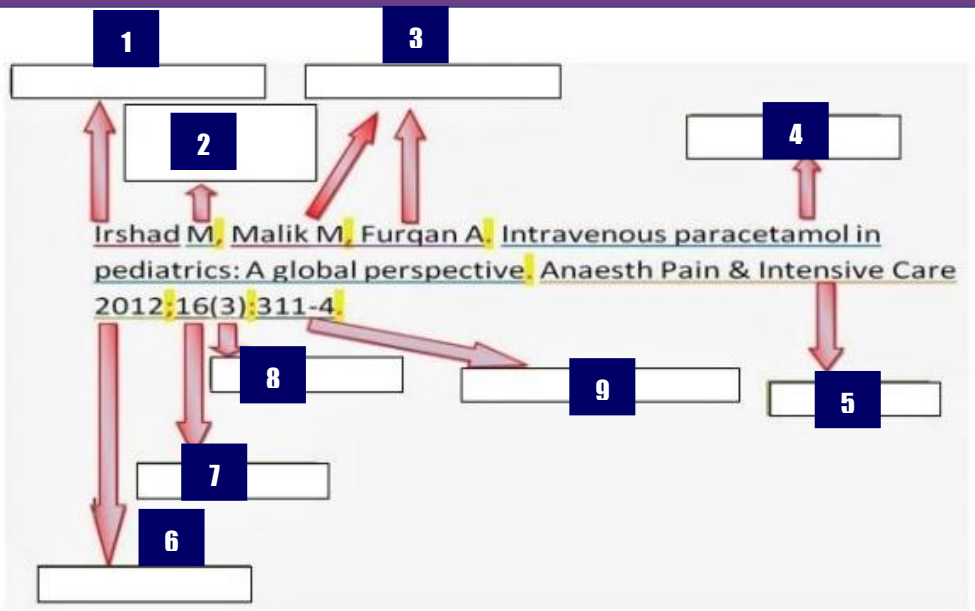
Slide 57



125. Which type of samples you can detect from the above picture ?

Chapter 12: Writing a research report

Slide 58

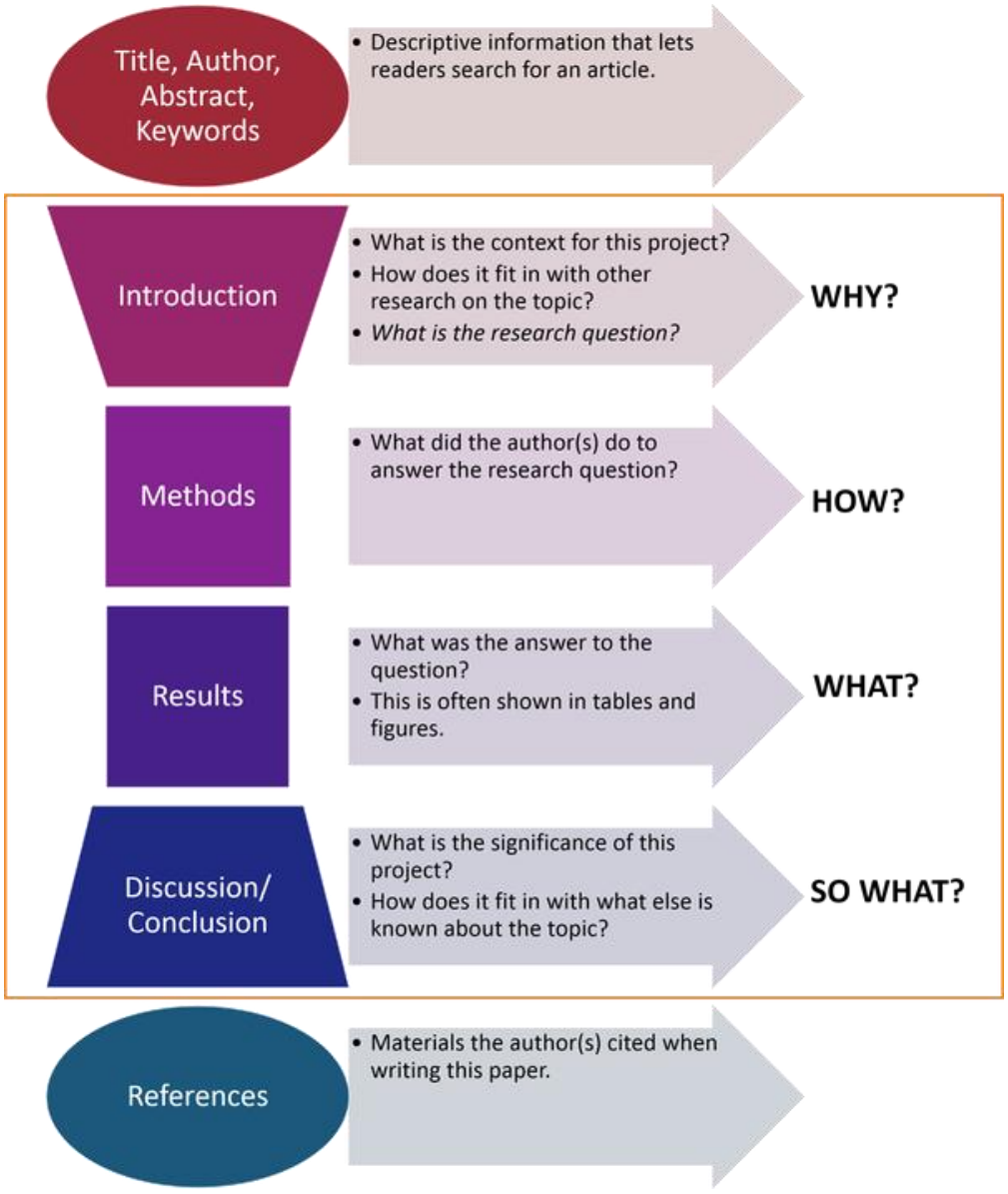


126. This figure represents Vancouver style, number (4) refers to:

a. Author name
b. Title of article
c. Journal name
d. Journal volume

Tashkandy MA, Gazzaz ZJ, Farooq M, Dhafar KO **{authers names}**. Reasons for delay in inpatient admission at an emergency department. **{Title of the article}** J Ayub Med Coll Abbottabad **{Journal or text book name}.** 2008 **(date of publication);** 20 **{Journal volume}**: 38–42 **{page numbers of the reference}**

Structural elements of the scientific paper


Title, Author, Abstract, Keywords
• Descriptive information that lets readers search for an article.
Introduction
• What is the context for this project?
• How does it fit in with other research on the topic?
• What is the research question?
WHY?
Methods
• What did the author(s) do to answer the research question?
HOW?
Results
• What was the answer to the question?
• This is often shown in tables and figures.
WHAT?
Discussion/ Conclusion
• What is the significance of this project?
• How does it fit in with what else is known about the topic?
SO WHAT?
References
• Materials the author(s) cited when writing this paper.

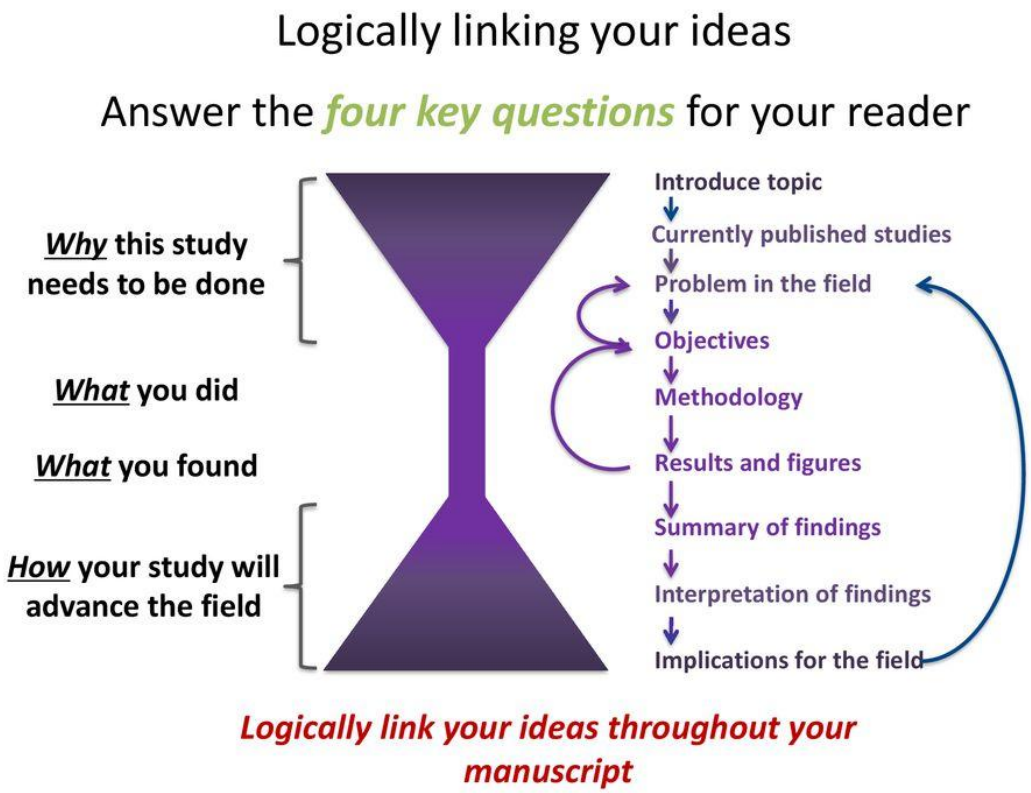
You need to answer 4 key questions for your readers

① Why did your study need to be done? (Introduction)

② What did you do? (Methods)

③ What did you find? (Results)

④ How will your study advance the field? (Discussion)



127. According to the structure of a scientific paper shown in the slide 59, which of the following is most appropriately addressed in the Introduction section?

A. Statistical analysis of collected data

B. Interpretation of findings in relation to previous studies

C. Identification of the research question and its context

D. Presentation of results using tables and figures

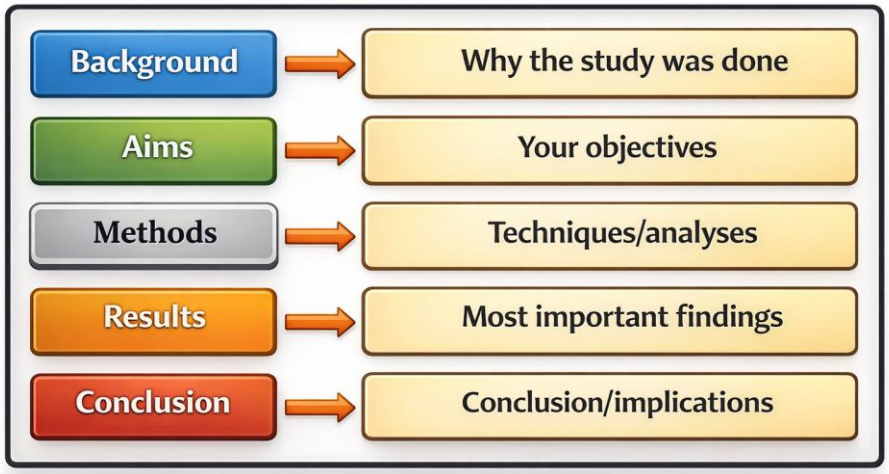
128. Based on the diagram, which of the following statements correctly distinguishes the Results section from the Discussion section?

A. Results explain why findings occurred, while Discussion reports numerical outcomes

B. Results present findings without interpretation, while Discussion interprets their significance

C. Results compare findings with previous literature, while Discussion reports tables and figures

D. Results define the research question, while Discussion describes study methods



Introduction

Introduction: Why does your study need to be done?

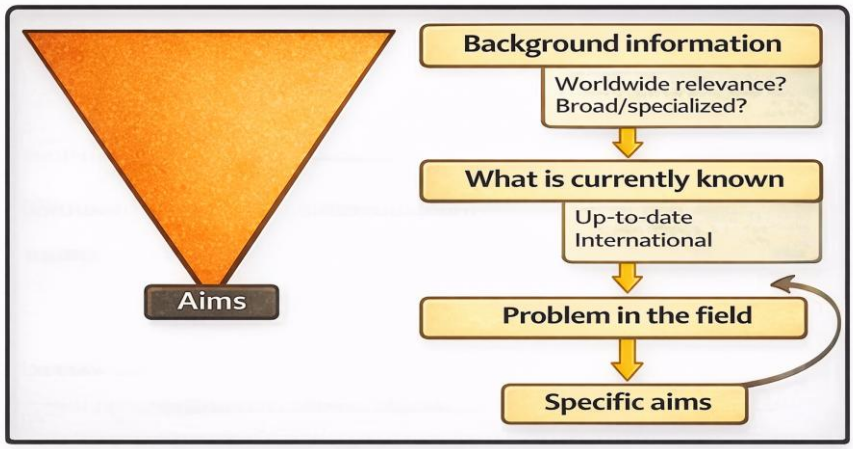


Figure (16): Introduction components.

129. Based on the funnel-shaped structure shown in the figure, which of the following sequences correctly represents the logical flow of the Introduction?

A. Specific aims → Problem in the field → What is currently known → Background information

B. Background information → What is currently known → Problem in the field → Specific aims

C. What is currently known → Background information → Specific aims → Problem in the field

D. Background information → Problem in the field → Specific aims → What is currently known

Discussion

Discussion : How your study contributes to the field?

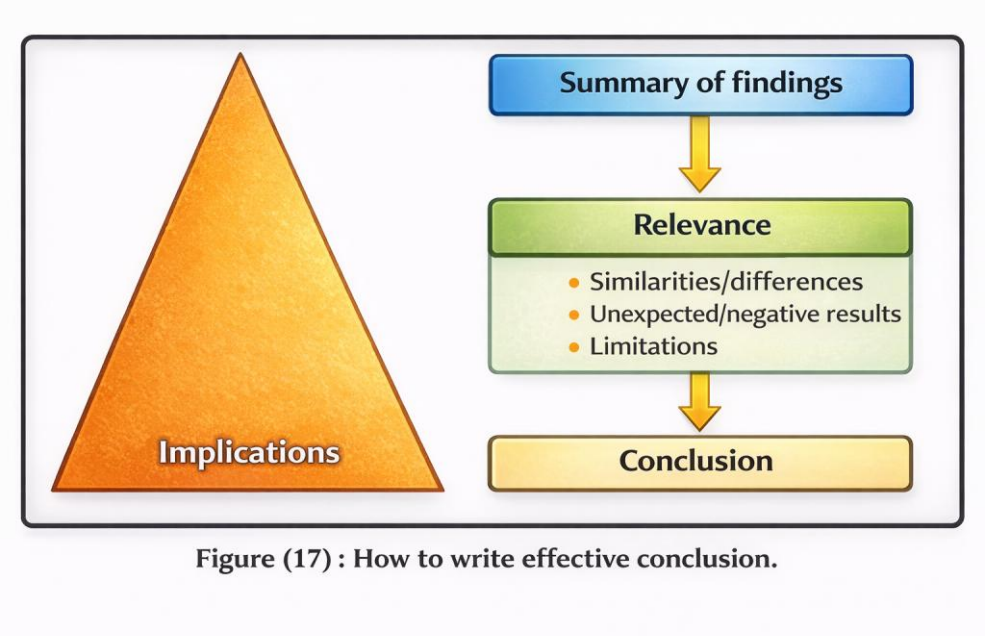


Figure (17) : How to write effective conclusion.

130. Based on the sequence illustrated in the figure, which of the following elements should be addressed within the Relevance component of the Discussion?

A. Restating the research question word-for-word
B. Presenting raw data without interpretation
C. Comparing results with previous studies and discussing limitations
D. Describing participant recruitment and sampling methods

Abstract

⊙ **First impression of your paper.**
⊙ **Concise summary of your paper.**

Notes

⊙ **What tense should I use?** There are a few suggestions for deciding which tense to use in technical documentation:

- ◈ **Past tense** for describing methods, results.
- ◈ **Present tense** for describing introduction, discussion, conclusions.

⊙ **What are the accepted conventions for numbers?**

☞ If the number refers to a measured quantity, it should be expressed in figures, irrespective of how large the number is e.g. 2.4 seconds; $5000; 9 kilometers ; 6 tones; 16 C°.

☞ If not, then the following rules apply.

- ◈ Counted numbers of ten or less are written out.
- ◈ Those above ten are numeralised
- ◈ Examples : “Measurements were taken in five areas” or “Measurements were taken in 20 areas”.
- ◈ A number at the beginning of a sentence should be written out, e.g.: Twenty samples were taken (but try not to start your sentences with numbers).

131. Numbers that represent measured quantities should always be written in figures, regardless of their size.

A. True

B. False

132. Counted numbers ten or less should be written in numerals in scientific writing.

A. True

B. False

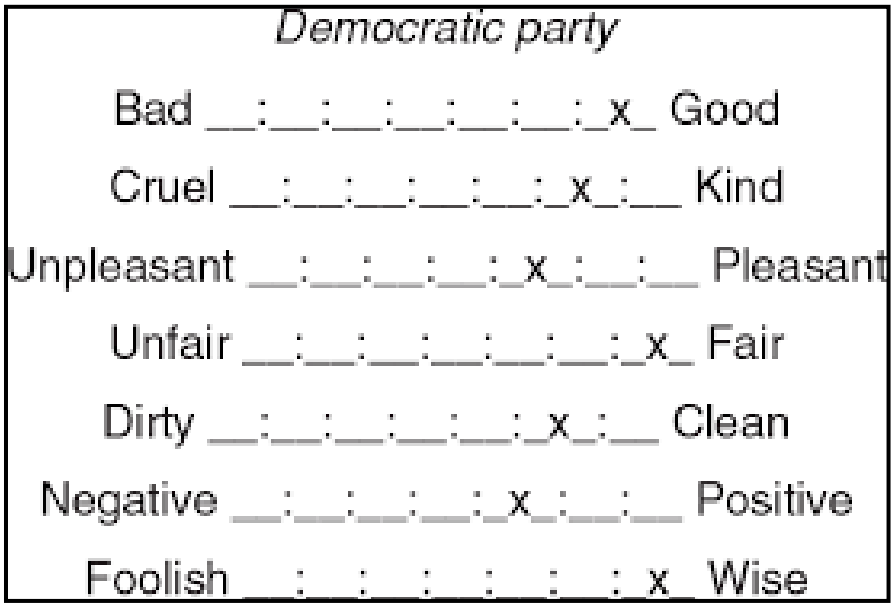
133. When a number appears at the beginning of a sentence, it should be written out in words.

A. True

B. False

Semantic differential

⊙ **Scale is inscribed between two bipolar words** and respondent selects the point that most represents the direction and intensity of his / her feelings



134. Which of the following best describes a semantic differential scale?

A. A scale that asks respondents to agree or disagree with a statement

B. A scale placed between two bipolar adjectives to measure attitude direction and intensity

C. A checklist used to record the presence or absence of symptoms

D. A numerical scale used exclusively for statistical measurements

135. In a semantic differential scale, placing the mark closer to one end of the scale primarily indicates:

A. The respondent's uncertainty about the item being evaluated

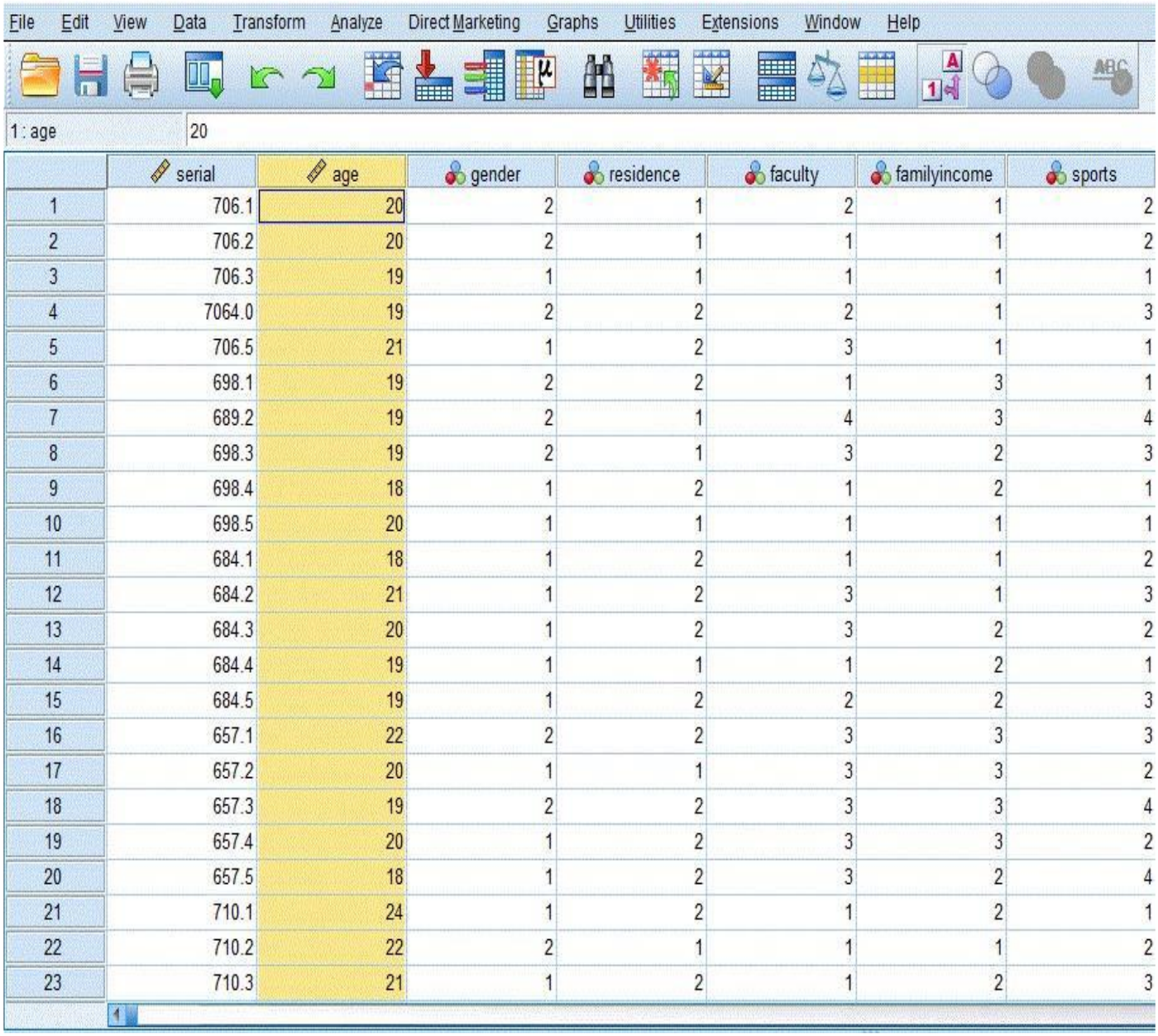
B. The frequency with which the behavior occurs

C. Both the direction and strength of the respondent's feelings

D. The objective quality of the item being measured

Slide 59

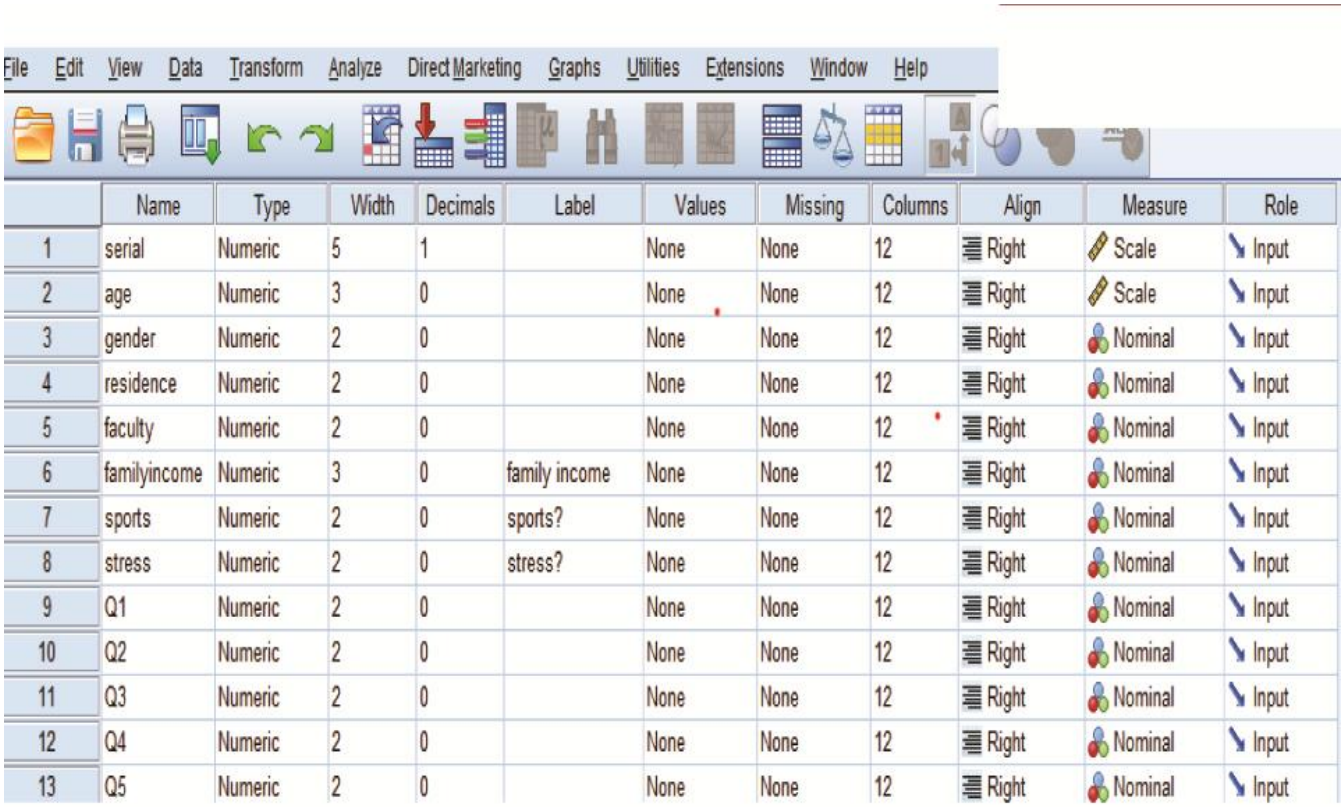
136. What is the name of the program seen in the picture?



	serial	age	gender	residence	faculty	familyincome	sports
1	706.1	20	2	1	2	1	2
2	706.2	20	2	1	1	1	2
3	706.3	19	1	1	1	1	1
4	7064.0	19	2	2	2	1	3
5	706.5	21	1	2	3	1	1
6	698.1	19	2	2	1	3	1
7	689.2	19	2	1	4	3	4
8	698.3	19	2	1	3	2	3
9	698.4	18	1	2	1	2	1
10	698.5	20	1	1	1	1	1
11	684.1	18	1	2	1	1	2
12	684.2	21	1	2	3	1	3
13	684.3	20	1	2	3	2	2
14	684.4	19	1	1	1	2	1
15	684.5	19	1	2	2	2	3
16	657.1	22	2	2	3	3	3
17	657.2	20	1	1	3	3	2
18	657.3	19	2	2	3	3	4
19	657.4	20	1	2	3	3	2
20	657.5	18	1	2	3	2	4
21	710.1	24	1	2	1	2	1
22	710.2	22	2	1	1	1	2
23	710.3	21	1	2	1	2	3

Slide 60

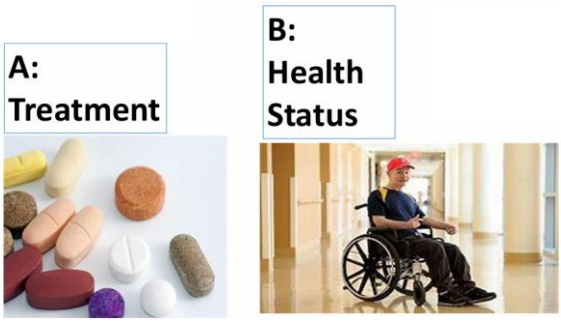
137. What is the n ram seen in the picture?



	Name	Type	Width	Decimals	Label	Values	Missing	Columns	Align	Measure	Role
1	serial	Numeric	5	1		None	None	12	Right	Scale	Input
2	age	Numeric	3	0		None	None	12	Right	Scale	Input
3	gender	Numeric	2	0		None	None	12	Right	Nominal	Input
4	residence	Numeric	2	0		None	None	12	Right	Nominal	Input
5	faculty	Numeric	2	0		None	None	12	Right	Nominal	Input
6	familyincome	Numeric	3	0	family income	None	None	12	Right	Nominal	Input
7	sports	Numeric	2	0	sports?	None	None	12	Right	Nominal	Input
8	stress	Numeric	2	0	stress?	None	None	12	Right	Nominal	Input
9	Q1	Numeric	2	0		None	None	12	Right	Nominal	Input
10	Q2	Numeric	2	0		None	None	12	Right	Nominal	Input
11	Q3	Numeric	2	0		None	None	12	Right	Nominal	Input
12	Q4	Numeric	2	0		None	None	12	Right	Nominal	Input
13	Q5	Numeric	2	0		None	None	12	Right	Nominal	Input

اسئلة متنوعة

Slide 62



138. Which is the exposure variable and which is the Outcome variable in this slide?

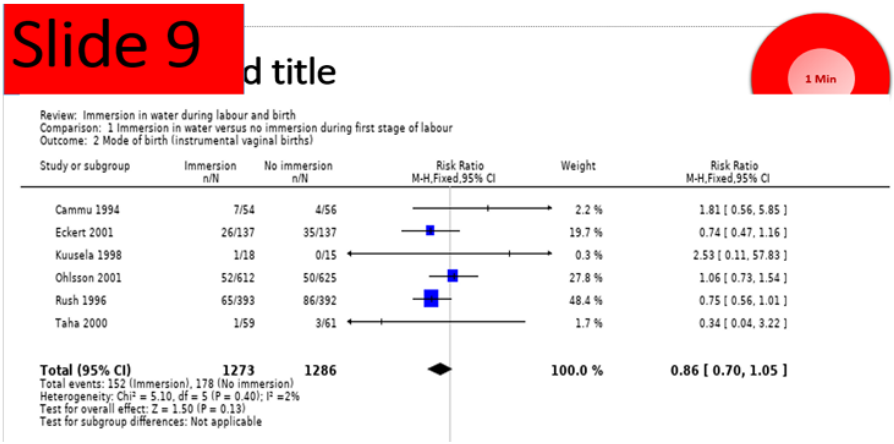
☑ Variable A :Treatment is: ……

☑ Variable B: Health status is: ……

139. Type of Health status variable (healthy or not healthy)

a. Qualitative ordinal
b. Continuous
c. Quantitative Ratio
d. Qualitative Nominal

Slide 63


Slide 9
d title
1 Min
Review: Immersion in water during labour and birth
Comparison: 1 Immersion in water versus no immersion during first stage of labour
Outcome: 2 Mode of birth (instrumental vaginal births)
Study or subgroup
Immersion n/N
No immersion n/N
Risk Ratio M-H,Fixed,95% CI
Weight
Risk Ratio M-H,Fixed,95% CI
Cammu 1994 7/54 4/56 2.2 % 1.81 [0.56, 5.85]
Eckert 2001 26/137 35/137 19.7 % 0.74 [0.47, 1.16]
Kuusela 1998 1/18 0/15 0.3 % 2.53 [0.11, 57.83]
Ohlsson 2001 52/612 50/625 27.8 % 1.06 [0.73, 1.54]
Rush 1996 65/393 86/392 48.4 % 0.75 [0.56, 1.01]
Taha 2000 1/59 3/61 1.7 % 0.34 [0.04, 3.22]
Total (95% CI) 1273 1286 100.0 % 0.86 [0.70, 1.05]
Total events: 152 (Immersion), 178 (No immersion)
Heterogeneity: Chi² = 5.10, df = 5 (P = 0.40); I² =2%
Test for overall effect: Z = 1.50 (P = 0.13)
Test for subgroup differences: Not applicable

140. This picture represents a statistical technique that is used primarily in which of the following studies?

a. Retrospective cohort
b. Case control study
c. Systematic review
d. Meta-analysis

141. Mention one data base can be used in research

Slide 64

	Teeth decay	Control	Total
Eating much sweets	200	80	280
Low sweet intake	100	220	320
Total	300	300	600

⊙ In this case control study, the researcher wants to find if there was an association between Eating much sweets and teeth decay (dental cares).

141. Calculate the odds ratio from the table

142. Interpret the results of odds ratio.

Slide 65

143. Case report is characterized by:

a. Play an important role in recognizing new disease.

b. Can measure prevalence of disease.

c. Can measure efficacy of certain treatment.

d. Can measure incidence of disease.

144. Descriptive cross - sectional study can't be used for:

a. Measuring prevalence of disease in a community. b. Measuring odds ratio

c. Recognize a new disease d. Calculating odds ratio

145. One of the following actions is recommended in the systematic review:

a. English language should be selected in the inclusion criteria

b. The authors keep a log of all reviewed studies

c. One reviewer is reviewing the selected studies

d. Do a statistical analysis for combing the results

146. Peer review can best be summarized as:

a. A process for evaluating the safety of the study participants.

b. A process by which independent scientists evaluate the technical quality of research papers.

c. A process by which a scientist's supervisors can give advice to perform the study correctly.

d. A method of typesetting in publishing.

147. A researcher wants to study the effect of two different types of diets in an intervention study for the management of cholesterol , So he predicts first that there will be no difference between both diets. Which type of hypothesis is this?

a. Research hypothesis
b. Alternative hypothesis
c. Null hypothesis
d. Qualitative hypothesis

148. Complete the missed information in this part from the three-point algorithm which can help to determine the design of a research study.

(A) In analytical studies,

☑ If the investigator determine (or control) the exposure, the study design is ……

☑ If the investigator does Not determine (or control) the exposure, the study design is …….

(B) In observational studies ,

☑ If the outcome was determined at the start of the study , the study design is……..

☑ If the outcome was determined at the end of a period of follow up, the study design is…….

149. Discuss advantages of cohort studies.

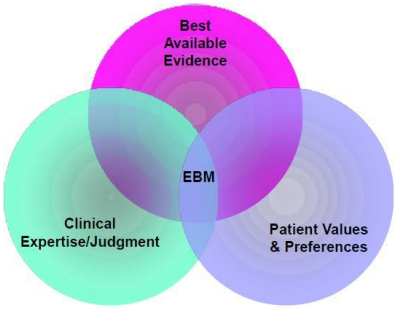
150. Discuss advantages of cross section studies

151. Discuss disadvantages of Cohort study.

152. Discuss disadvantages of cross section study

EBM OSPE 2026

Slide 62 (Chapter ① EBM)



138. Based on the EBM model shown in the image, which of the following scenarios represents a *deviation* from true Evidence-Based Medicine?

A. A clinician follows high-quality guidelines but adapts them to a patient's cultural beliefs

B. A clinician chooses a treatment supported by strong evidence and aligned with patient preferences

C. A clinician applies the best available evidence without considering patient values or clinical judgment

D. A clinician balances personal clinical experience with systematic research findings.

139. In the context of evaluating current best research evidence, which of the following scenarios best illustrates a study that is valid and important, but lacks relevance?

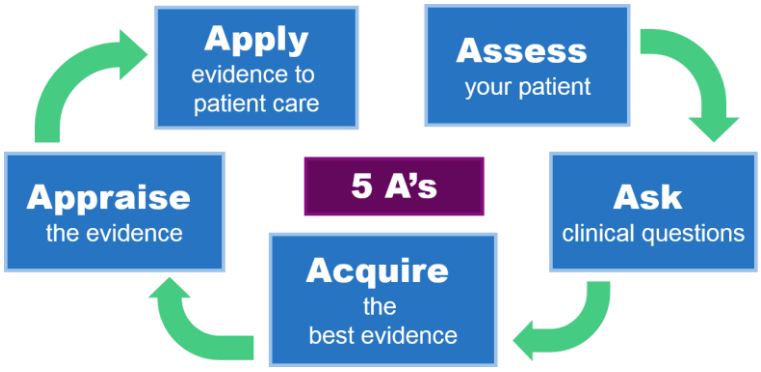
A. A large randomized controlled trial with low risk of bias shows a clinically meaningful reduction in mortality, but the intervention is not available in the local healthcare setting.

B. A cohort study demonstrates a modest treatment effect, but confidence intervals are wide due to small sample size.

C. A systematic review includes only observational studies with significant residual confounding.

D. A randomized trial reports a statistically significant outcome using a non-validated measurement tool.

Slide 63 (Chapter ① EBM)



140. A clinician identifies a clinical problem, searches PubMed for recent randomized controlled trials, critically evaluates their internal validity, and then decides not to use the intervention because it conflicts with the patient's values. According to the 5 A's framework illustrated in the image, which sequence of steps has been correctly followed?

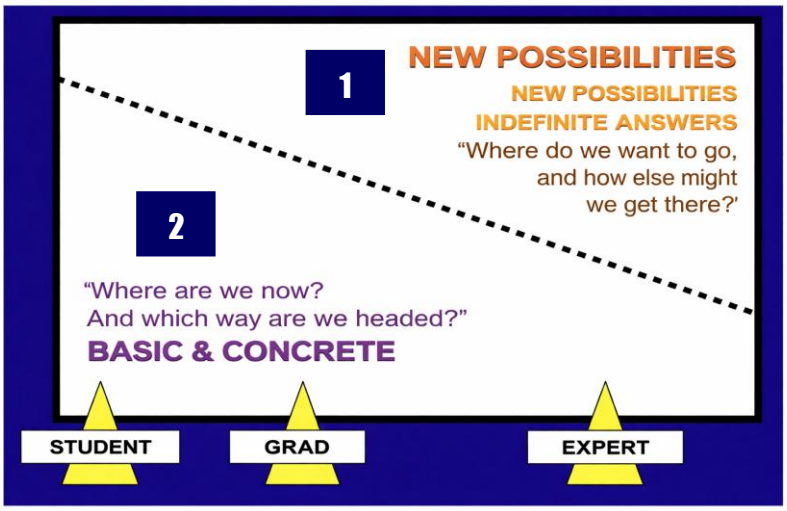
A. Ask → Acquire → Appraise → Apply

B. Assess → Ask → Acquire → Appraise

C. Ask → Acquire → Appraise → Assess

D. Acquire → Appraise → Apply → Assess

Slide 64 (Chapter ② EBM)



141. In the diagram shown, the numbered regions (1) and (2) represent two different types of clinical information. Which of the following correctly identifies what region 1 and region 2 refer to?

A.

1 → Background information

2 → Foreground information

B.

1 → Foreground questions (new possibilities, indefinite answers)

2 → Background questions (basic and concrete information)

C.

1 → Questions mainly asked by students

2 → Questions mainly asked by experts

D.

1 → Basic factual knowledge

2 → Exploratory decision-making questions

142. Enumerate Domains of clinical questions

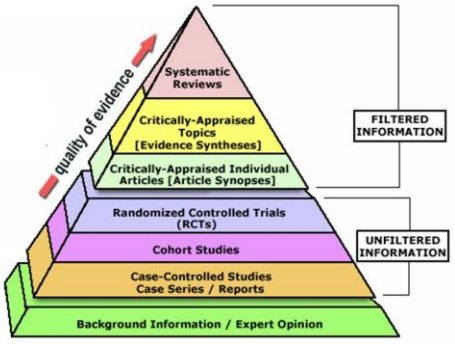
Slide 65 (Chapter ② EBM)

Examples on formulating research questions using PICO format :

143. A middle-aged female presents to you with dyspepsia. After thorough history taking and examination, you suspect duodenal ulcer, and you advise her an upper endoscopy with biopsy to diagnose H. pylori & treat accordingly. She refuses the procedure and asks for an alternative test or empirical treatment. You consider breath test instead, but you are not sure about its reliability.

144. A 50-year-old mother of three grown children, has been recently diagnosed with a malignant breast tumor. She is to receive care from the Oncology Department. Among possible treatment options to be considered are radiotherapy and the drug Tamoxifen. One of the oncology staff is keen to find research.

Slide 66 (Chapter ③ EBM, levels of evidence)



145. Which of the following combinations represents the highest level of evidence?

A. Recommendation B – Level 2b – Individual cohort study

B. Recommendation A – Level 1b – Individual RCT

C. Recommendation A – Level 1a – Systematic review of RCTs

D. Recommendation C – Level 4 – Case series

146. An individual case–control study corresponds to which recommendation level and evidence grade?

A. Recommendation B – Level 2b

B. Recommendation B – Level 3b

C. Recommendation C – Level 4

D. Recommendation D – Level 5

147. Which of the following types of studies would most appropriately lead to a Recommendation C?

A. Systematic review of cohort studies

B. Individual randomized controlled trial

C. Case series or case report

D. Expert opinion

148. A guideline based mainly on expert opinion and background information would be classified as:

A. Recommendation C – Level 4

B. Recommendation D – Level 5

C. Recommendation B – Level 3a

D. Recommendation A – Level 1b

149. Which of the following statements is correct regarding Recommendation B in the table?

A. It includes only randomized controlled trials

B. It includes both cohort studies and case–control studies

C. It is based exclusively on expert opinion

D. It represents the lowest level of evidence

باقى الاسئلة فى مراجعة النظرى

Slide 67 (Chapter ⑤ EBM)

Quantifying the risk (benefit/harm) in RCTs

① Experimental Event Rate (EER).

② Control Event Rate (CER).

③ Relative Risk or Risk Ratio (RR).

④ Absolute Risk Reduction or increase (ARR).

⑤ Relative Risk Reduction or increase (RRR).

⑥ Odds of outcome.

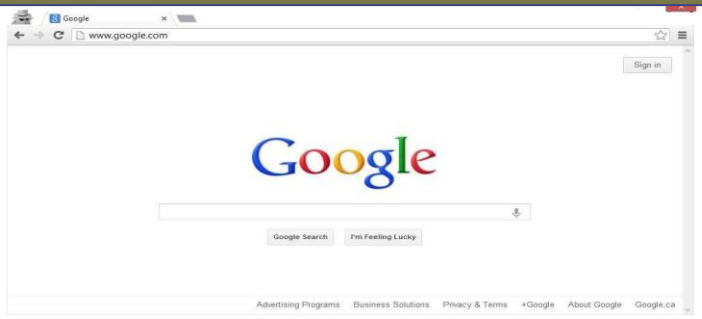
⑦ Odds ratio.

⑧ Number Needed to Treat (NNT)

⑨ Number Needed to Harm (NNH)

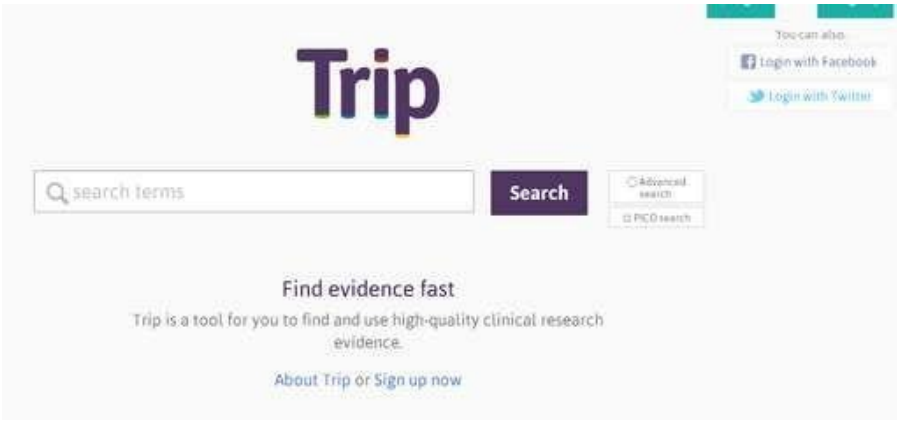
⑩ Intention To Treat (ITT)

Slide 68 (Chapter ⑤ EBM)



Google is a general search engine

Google schoolar is a specific search engine


Trip
search terms
Search
Find evidence fast
Trip is a tool for you to find and use high-quality clinical research evidence.
About Trip or Sign up now

Trip is a meta-search engine

The searching process in "Trip" is more effective because it contains many links for many search engines & many links for data-bases.

Data-bases for finding evidence

I) Primary : original research publications

① **PubMed** (contains primary mainly & secondary "systematic reviews").

② **EmBase**.

③ **Cinahl**.

④ **Pyschlit**.

II) Secondary : pre-appraised (Ultra)

① **Systematic Reviews:** Cochrane Library (الأشهر).

② **Guidelines :**

☑ Guidelines Clearinghouse

☑ Guidelines International Network

③ **CATS (Critically Appraised Topics) (Pre-appraised individual RCTs) :**

☑ BestBets

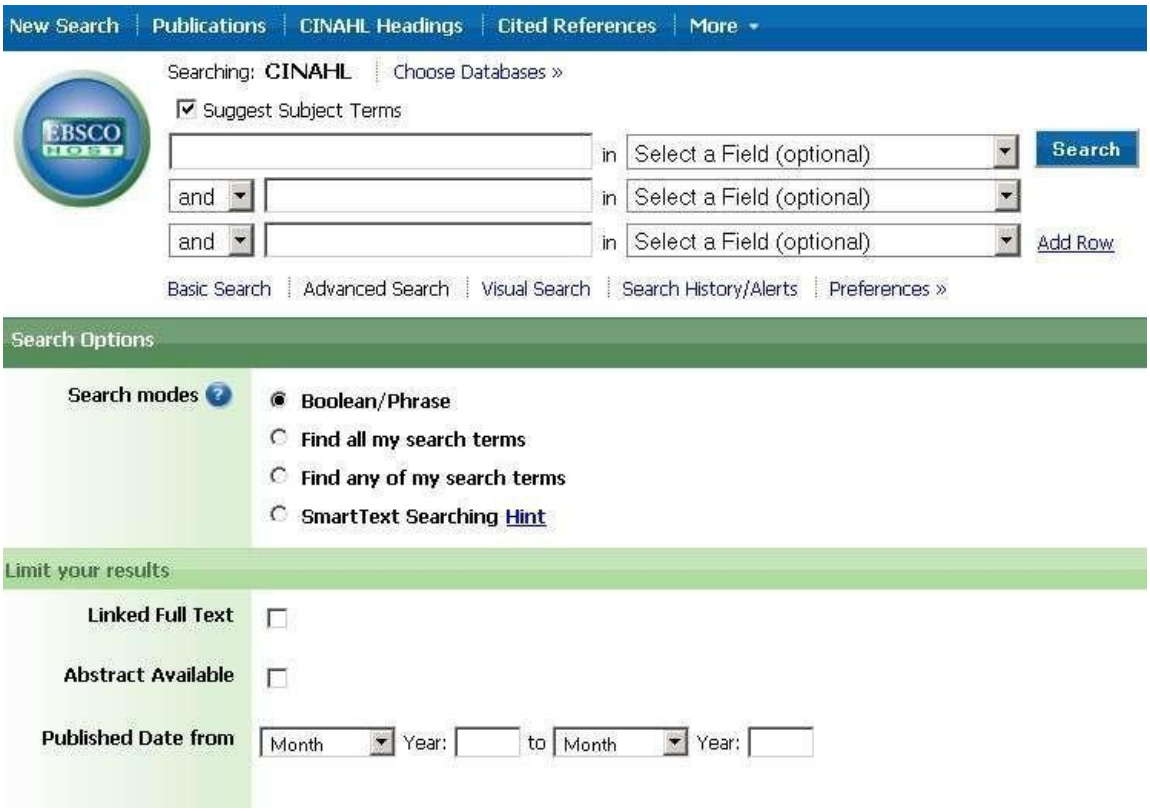
☑ ACP Journal Club

④ **Point of Care :**

☑ Clinical Evidence

☑ EvidencePlus

☑ UpToDate



CINAHL data-base

It is a data-base for **primary** original research publications.

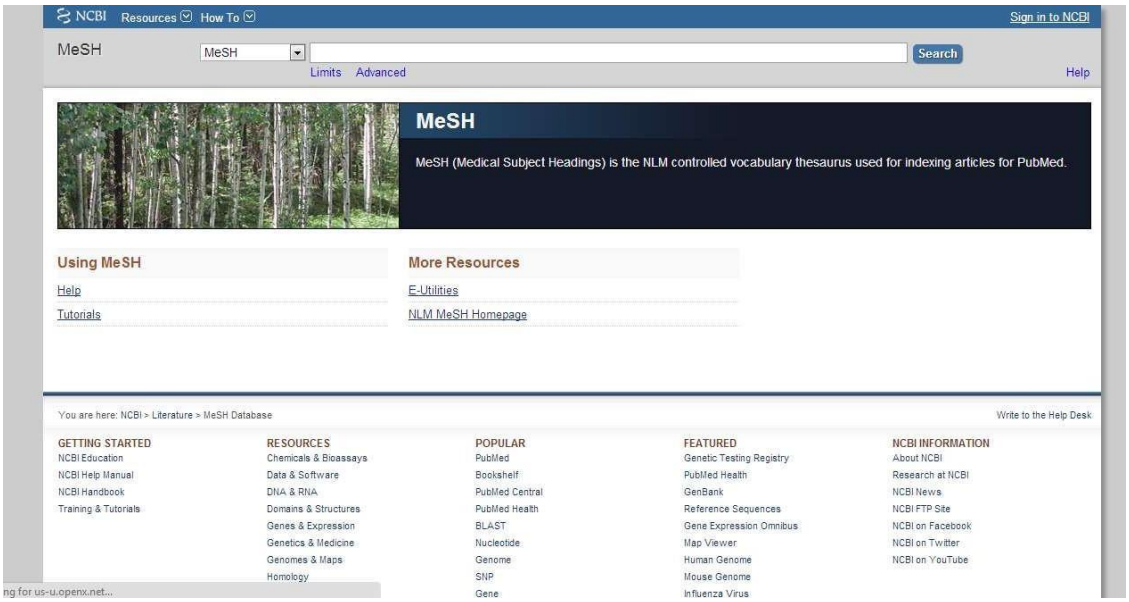
150. Which type of evidence sources you can find in the presented database?

A. Primary source of non-appraised evidence

B. Secondary source of non-appraised evidence

C. Secondary source of appraised evidence

D. Tertiary resources



151. What does the abbreviation (MeSH) stand for?

MeSH stands for Medical Subject Headings

152. Mention the advantage of MeSH.

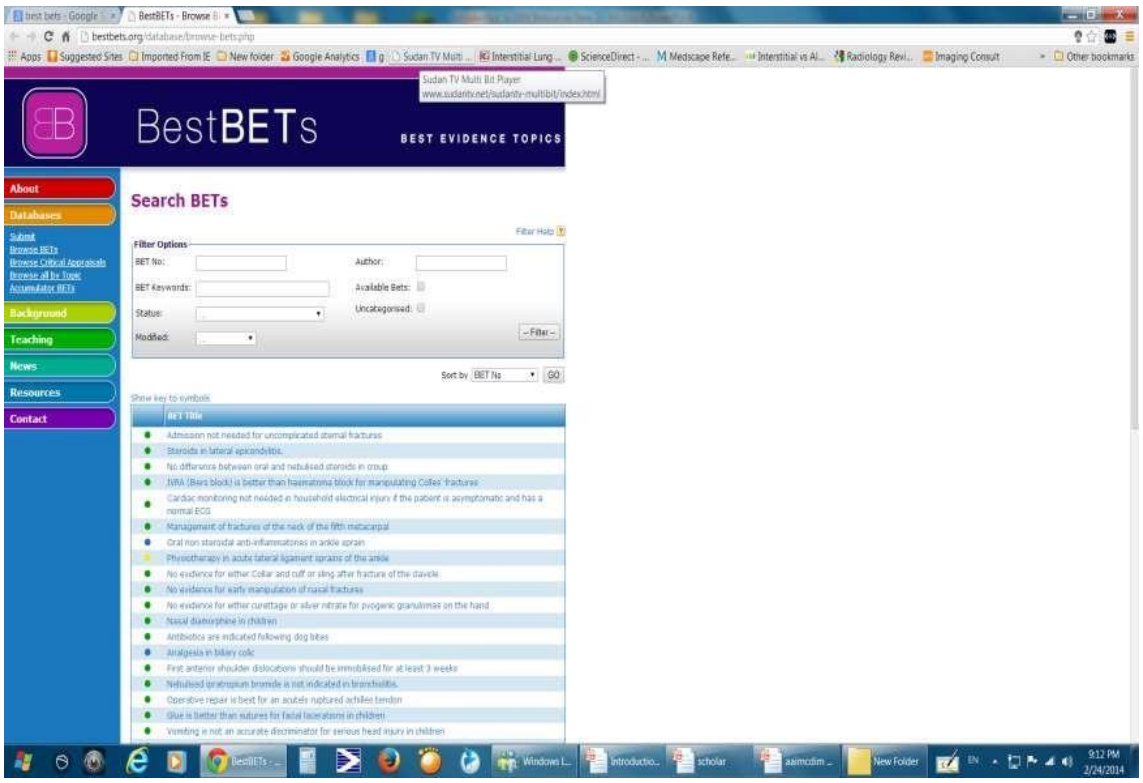
MeSH provides a **controlled vocabulary** that standardizes indexing of articles, allowing **more accurate and comprehensive literature searching** by retrieving all relevant articles regardless of the exact words used by authors.

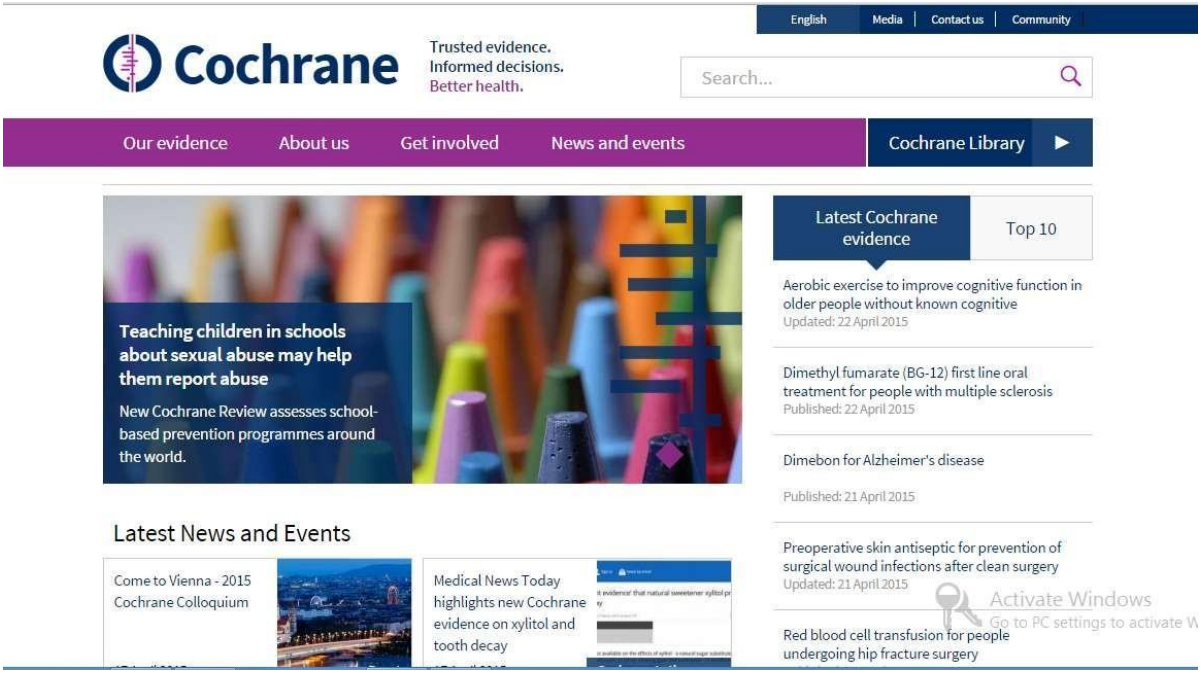
153. Define controlled vocabulary.

A controlled vocabulary is a **standardized set of predefined terms** used for indexing and retrieving information, where the same concept is always described using the **same official term**, regardless of synonyms or variations in wording.

154. Define Boolean operator

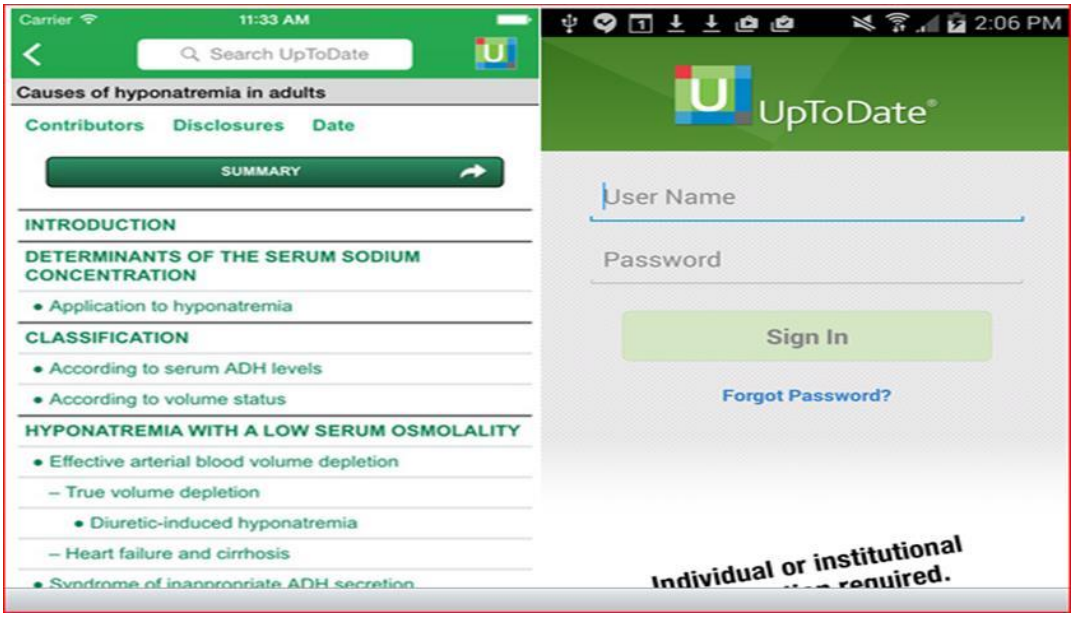
A Boolean operator is a **logical connector** (such as **AND, OR, NOT**) used in database searching to **combine or exclude search terms** in order to refine and control search results.




Cochrane
Trusted evidence.
Informed decisions.
Better health.
English
Media
Contact us
Community
Search...
Our evidence
About us
Get involved
News and events
Cochrane Library
Teaching children in schools about sexual abuse may help them report abuse
New Cochrane Review assesses school-based prevention programmes around the world.
Latest Cochrane evidence
Top 10
Aerobic exercise to improve cognitive function in older people without known cognitive
Updated: 22 April 2015
Dimethyl fumarate (BG-12) first line oral treatment for people with multiple sclerosis
Published: 22 April 2015
Dimebon for Alzheimer's disease
Published: 21 April 2015
Preoperative skin antiseptic for prevention of surgical wound infections after clean surgery
Updated: 21 April 2015
Red blood cell transfusion for people undergoing hip fracture surgery
Latest News and Events
Come to Vienna - 2015 Cochrane Colloquium
Medical News Today highlights new Cochrane evidence on xylitol and tooth decay
Activate Windows
Go to PC settings to activate W

155. Mention sources of secondary pre-appraised evidence.

Agency for Healthcare Research and Quality
National Guideline Clearinghouse
Help | RSS | Subscribe to weekly e-mail | Site map | Contact us
NGC is a public resource for evidence-based clinical practice guidelines.
Search the site:
GO
Search Tips
Advanced Search
About Search
Show Advanced Search filters
New This Week
September 16, 2013
New/Updated Guideline Summaries
HIGN
View All
Announcements
Conference News
The Guidelines International Network North America (G-I-N NA) continues to sponsor a monthly webinar series on topics of interest to the North American guideline community. Information on upcoming webinars, as well as audio files and slides from past webinars, is available on the G-I-N Web site.
More...
Find
Learn
Compare
Sign In to My NG
Save your favorite
summaries and orga
create custom e-ma
E-mail:
Password:
Remember Me
Sign In
New User? Create



Slide 68 (Chapter ⑥ EBM "Bias & confounding")

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.....

.....

.....

155. Which of the following can lack of optimal development of Clinical practice guidelines reduce health care quality through?

A. Minimizing variations in health care practices

B. Using of cost-effective interventions

C. Creating materials as (pamphlets, videos, etc)

D. High conflict of interest among Guidelines developers

156. Which of the following can corrupt guidelines development process?

A. When a panel of expertise exist in the team of GDGs

B. When the team of GDGs more than 20 persons

C. When patients and hospital managers are involved in the team of GDGs

D. When the team of GDGs involve Multiple disciplines

157. Which of the following is the definition of (A written plan without flexibility and must be followed)?

A. Policy B. Protocol

C. Guideline D. Procedure

158. Which of the following a research paper is appraised for?

A. Feasibility. B. Septicity.

C. Applicability. D. Availability.

160. What does validity indicate?

A. The ability to help relevant patients.

B. Closeness of evidence to the truth.

C. Impact and precision of the results.

D. Clinical importance of the evidence.

161. Which of the following is true about random error?

A. It's nature of qualitative data

B. It increase the precision

C. Unavoidable

D. Decreasing the sample size reduce the role of chance

162. Which of the followings is not correct about the hierarchical structure of information sources needed for researching evidence?

A. Synthesis

B. Synopsis

C. Systems

D. Synchronize

163. Which of the followings could be achieved to Control the confounding in research at the analysis stage?

A. Randomization

B. Restriction

C. Matching

D. Stratification

164. Explain intention to treat analysis

165. What are the types of errors in research and define one of them?

166. Mention the difference between attrition bias and attention bias.

167. Mention the Methods of controlling the confounding in the design stage

ملاحظات مهمة من السكاشن

⊙ Survey is a planned research for data collection. Survey studies the characteristics of certain health event among certain population within limited period of time. Survey is usually a synonymous to a cross-sectional study design.

⊙ What is a research? It is a systematic investigation of an event to provide a generalizable knowledge.

⊙ The study question is preferred not to be answered in Yes/No (Ex.,Is treatment A effective?

⊙ Hypothesis is placed in the paper or thesis before the study objectives (aim of work) or with it.

⊙ To be complete a hypothesis must include three components:

- ◈ The variables
- ◈ The population
- ◈ The relationship between the variable

⊙ The title is NOT underlined or italicized.

⊙ Objectives of the survey must be SMART

⊙ Content of objectives must be CMART

- ☞ Client.
- ☞ Methods
- ☞ Activity.
- ☞ Results.
- ☞ Time linked.

⊙ In questionnaire, there may be a self-selecting bias

⊙ **Advantages of questionnaire:**

① less expensive.

② Offers greater anonymity

More than six authors, use et al.

Article Title

Li W, Huang B, Kang D, Erik De Clercq E, Daelemans D, Pannecouque C, et al. Design, synthesis, and biological evaluation of novel 5- Alkyl- 6- Adamantylmethylpyrimidin- 4(3H)- ones as HIV- 1 non-nucleoside reverse- transcriptase inhibitors. Chem Biol Drug Des [Internet]. 2016 [cited 8 September 2016];88(3):380-385. Available from: http://onlinelibrary.wiley.com/doi/10.1111/cbdd.12765/epdf

Capitalize initial letters of Journal Title:

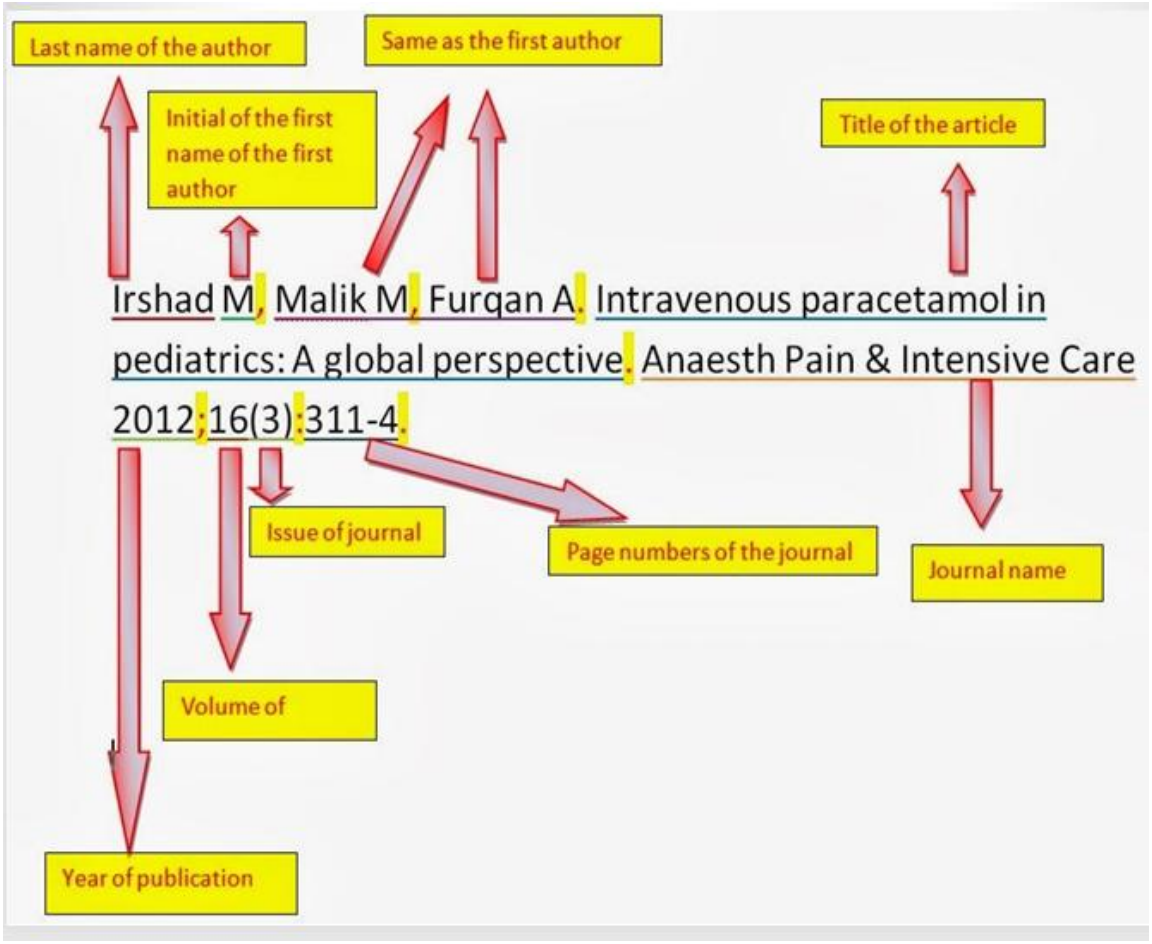
Chemical biology & drug design

Publication Year (cited date)

Volume (Issue)

Page Number

Available from: URL or Digital Object Identifier (DOI)


Last name of the author
Same as the first author
Initial of the first name of the first author
Title of the article
Irshad M, Malik M, Furqan A. Intravenous paracetamol in pediatrics: A global perspective. Anaesth Pain & Intensive Care 2012;16(3):311-4.
Issue of journal
Page numbers of the journal
Journal name
Volume of
Year of publication

1) Closed ended questions are better than open ended questions because they are:

A. Easily coded
B. Allow respondent to clarify
C. Needs post coding
D. Difficult to analyze

2) During wording of questionnaires one must be avoided:

A. Using closed ended questions
B. Using simple vocabulary
C. Using ambiguous terms
D. Putting sensitive questions in late sections

ملاحظات مهمة من السكاشن

⊙ It is generally best to keep all questions dealing with demographic information (such as age) at the end of the questionnaire.

⊙ Avoid using words like "occasionally", "regularly e.g. Q: how often they visit the cinema?

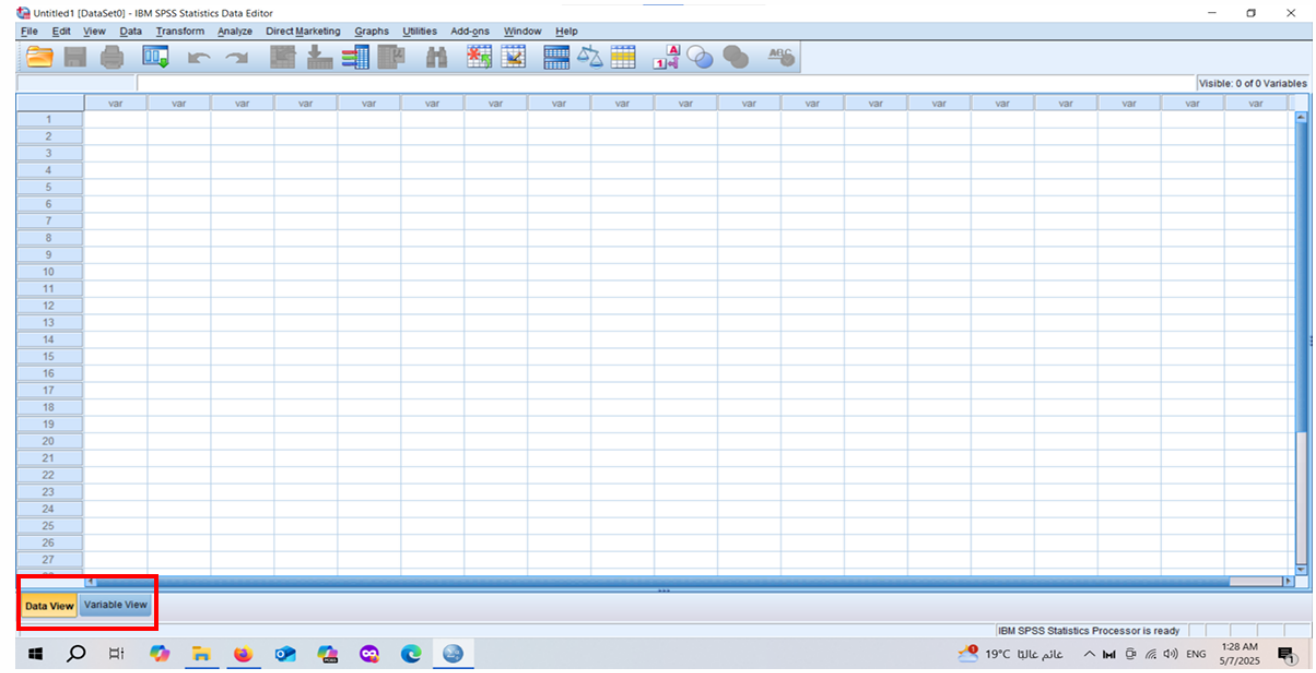
⊙ Sensitive questions should be prefaced by an interactive statement explaining the relevance of the question.

⊙ Piloting (Testing) a questionnaire ??????

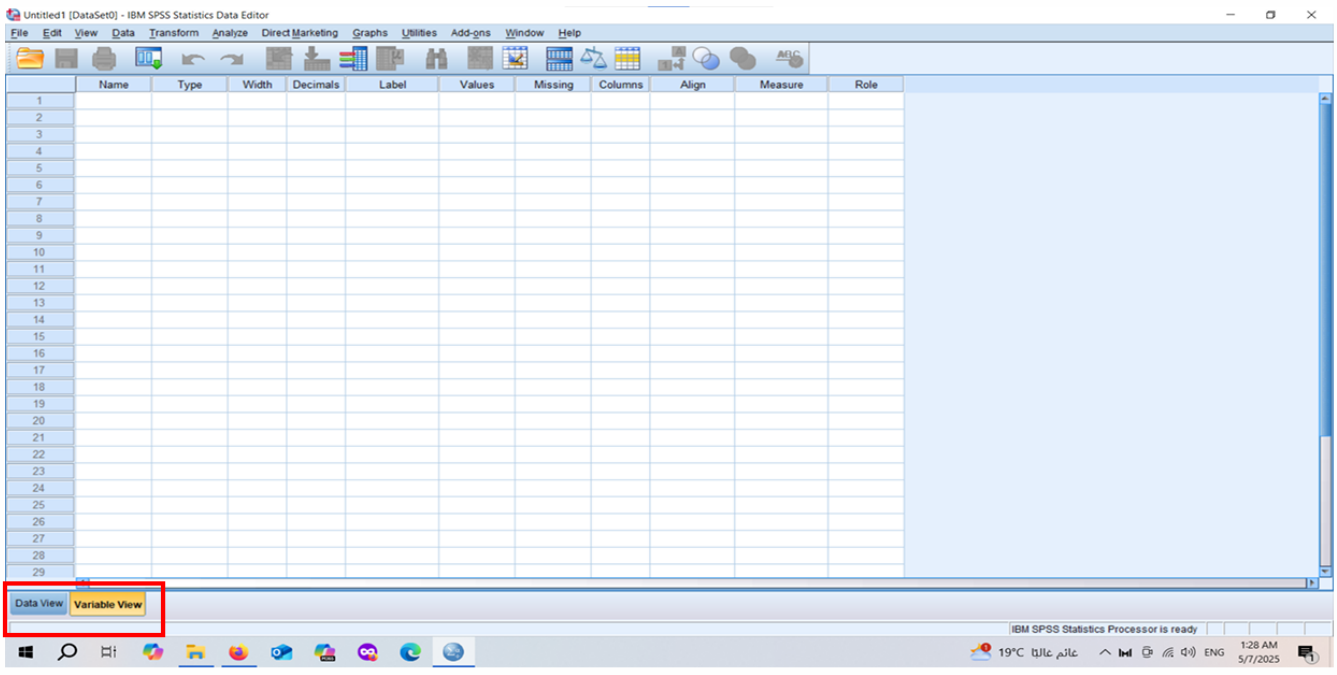
⊙ **Types of closed ended Questions:**

① Dichotomous (two choices: Yes / No)
② Multiple (more than two choices)
③ Likert scale (the amount of agreement / disagreement)
④ Numeric: Q: How far (to the nearest kilometer) did you travel today to reach this supermarket? ….. km
⑤ Semantic differential
⑥ Rank order

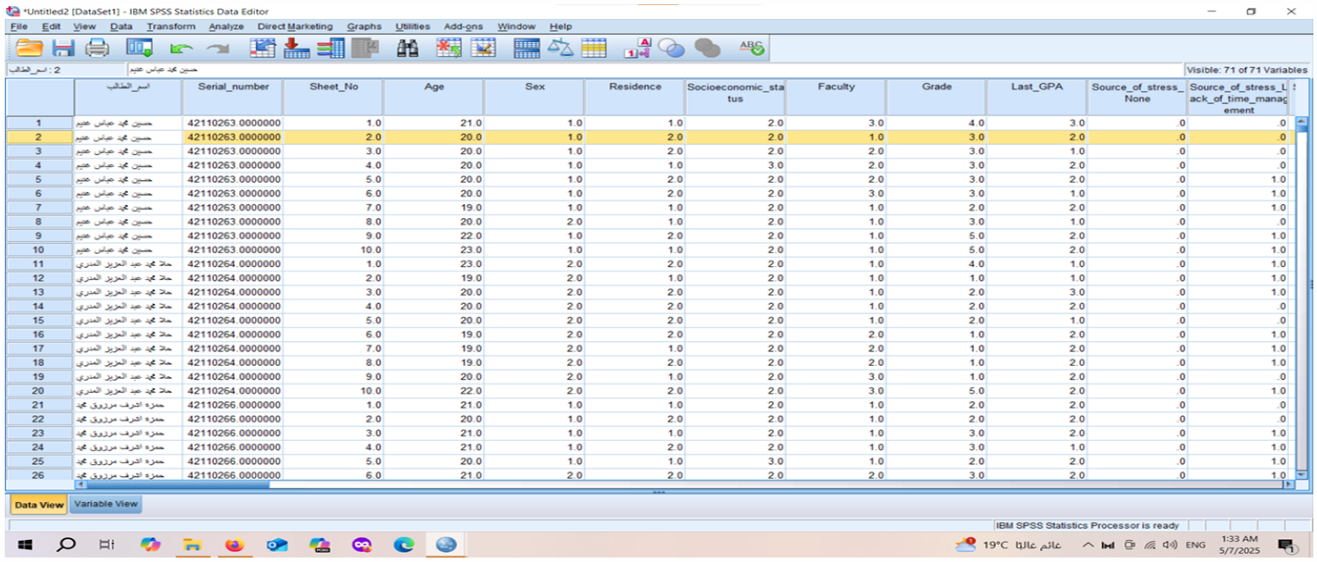
SPSS views.....Data view


Untitled1 [DataSet0] - IBM SPSS Statistics Data Editor
File Edit View Data Transform Analyze Direct Marketing Graphs Utilities Add-ons Window Help
Visible: 0 of 0 Variables
Data View
Variable View
IBM SPSS Statistics Processor is ready

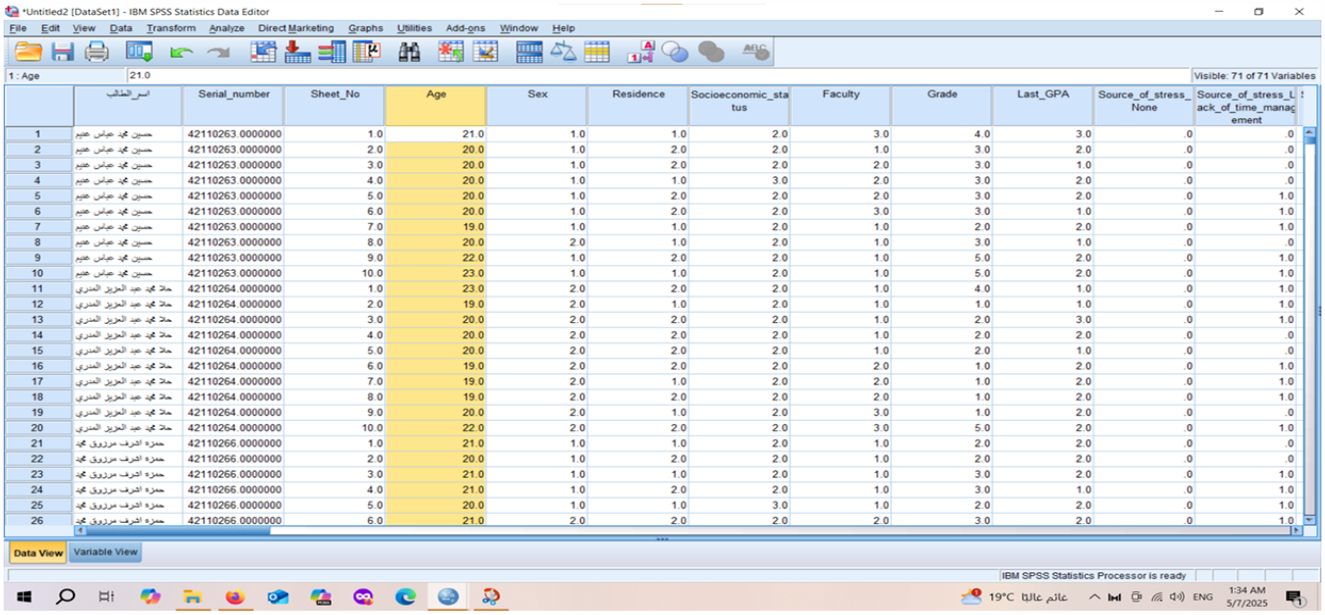
SPSS views.....Variable view



Data view.....Rows


*Untitled2 [DataSet1] - IBM SPSS Statistics Data Editor
File Edit View Data Transform Analyze Direct Marketing Graphs Utilities Add-ons Window Help
Visible: 71 of 71 Variables
Data View
Variable View
IBM SPSS Statistics Processor is ready

Data view.....Columns


*Untitled2 [DataSet1] - IBM SPSS Statistics Data Editor
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1 : Age
21.0
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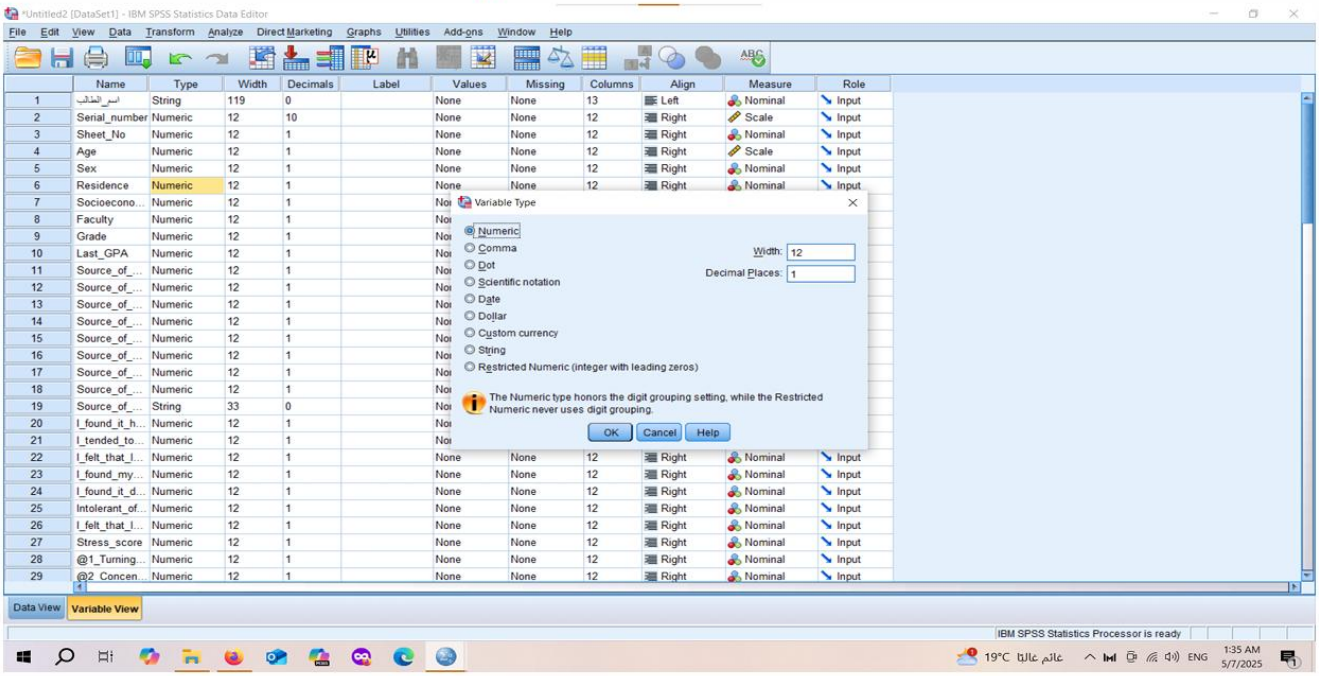
Data View
Variable View
IBM SPSS Statistics Processor is ready

Variable view..... Type of variable



⊙ Textbooks are good for answering background questions

⊙ Answers of background questions are “fibers of medicine”

⊙ **Examples of background questions:**

- ☞ The causative microbiologic agent of disease
- ☞ A recommended dose of a drug
- ☞ A list of the attributes of syndrome

⊙ Journal articles are good for answering foreground questions.

⊙ Foreground questions are those usually found at the cutting edge of medicine

⊙ Foreground questions are the heart of the practice of EBM

⊙ **Examples of Foreground questions:**

- ☞ Intervention or exposure
- ☞ A possible comparison intervention
- ☞ Outcomes of interest

⊙ It is best to start with a broad database that is likely to include a significant number of papers.

⊙ Examples of website (contain any topic): Yahoo, Guidelines Websites etc

⊙ Examples of databases: Medline ,Cochrane etc

⊙ **MEDLINE**:

- ☑ It is probably the most widely used database searching for life sciences and biomedical information.
- ☑ It is maintained by the National Library of Medicine, USA

⊙ **Types of search engines:**

- ☑ **General:** e.g. Google, Yahoo, etc
- ☑ **Specialized:** Google Scholar, Pubmed

⊙ Yahoo is a web services provider that offers both a search engine and a directory of world wide Web pages (important).

⊙ **PubMed (www.pubmed.gov)**

- ☑ It is a specialized search engine & source of primary (Original) literature.

☑ Is updated regularly.

☑ Covers fields of medicine, nursing, dentistry, veterinary medicine, pharmacology, health care system, and allied health.

☑ However, PubMed coverage on some topics such as clinical trials has been shown to be relatively poor.

☑ Bookshelf is a component of PubMed. It is a full-text archive of books, reports, databases, and other documents related to biomedical, health, and life sciences

⊙ **Finding evidence:** ① Primary (Original) and ② Secondary (Pre-appraised).

① Primary: original research publications:

① **Pubmed**

② **Embase:** it is little used in most nonteaching institutions because of its cost. Its major emphasis is on *pharmacology and toxicology*.

③ **CINAHL:** Although produced primarily *for nursing and allied health* practitioners, this database can be useful for physicians & surgeons when questions about *alternative therapies or rehabilitation techniques* arise

④ **Pyschlit**

② Secondary: pre-appraised:

☑ Systematic Reviews: Cochrane Library.

☑ Guidelines websites: Guidelines Clearinghouse, Guidelines International Network

☑ CATS: BestBets, ACP Journal Club

☑ Point of Care: Clinical Evidence, EvidencePlus, UpToDate.

⊙ Secondary (pre-appraised) literature is useful for point-of-care searches

⊙ **Two types of pre-appraised databases:**

☑ Pre-appraised Synthesis of studies e.g. Guidelines & Systematic Reviews

☑ Pre-appraised Individual studies: Critically appraised Topics CATs

⊙ **The Cochrane Database of Systematic Reviews (CDSR)** is the leading journal and database for systematic reviews in health care. The CDSR includes Cochrane Reviews (systematic reviews) and protocols for Cochrane Reviews as well as editorials and supplements

⊙ **National Guideline Clearinghouse (NGC):** a database of evidence-based clinical practice guidelines and related documents. The NGC aimed to provide physicians, nurses, and other health professionals, health care providers, health plans, integrated delivery systems, purchasers, and others an accessible mechanism for obtaining objective, detailed information on clinical practice guidelines and to further their dissemination, implementation, and use.

⊙ **Critical Appraisal tools:**

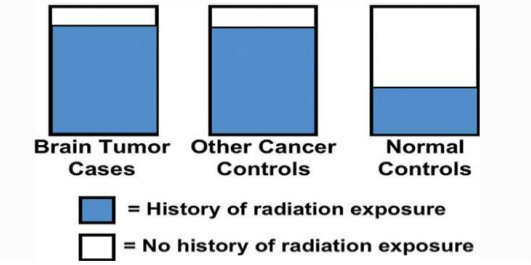
① **CONSORT:** Consolidated Standards of Reporting Trials (Title, Abstract, Introduction, Methods, Results & Discussion).

② **Cochrane Collaboration tools:** items for quality assessment such as: Study aims, justification, Methodology used, Sample selection, Method of randomization & allocation blinding.

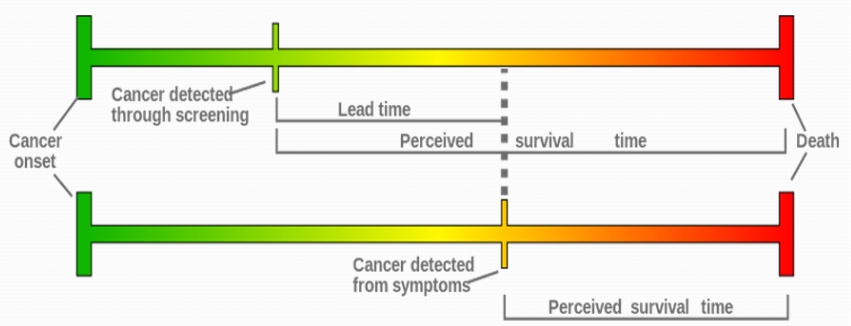
③ **The AGREE instrument:** assess methodological quality of Clinical Practice Guidelines.

④ **CASP Checklists:** Critical Appraisal Skills Programme

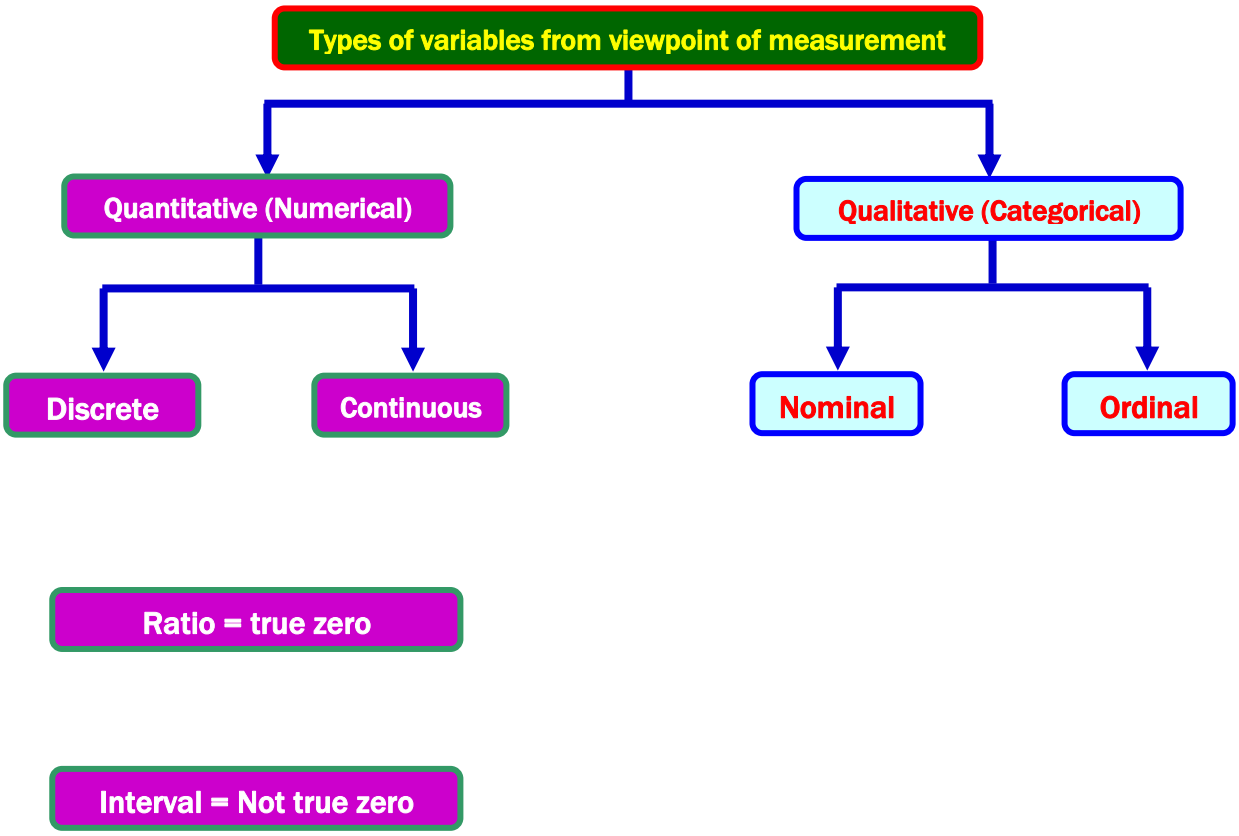
⊙ **Types of bias:** selection bias, information bias & confounding bias.



Recall bias



Lead time bias



- **Qualitative** data is called **categorical** data
- **Qualitative** data is called **non-numeric** data
- **Quantative** variable is the variable that studied **can be reported numerically.**
- **Discrete** variable assumes **only limited values in a range.**
- **Continuous** variable assumes **any value in a range.**
- **All qualitative** data are **discrete**.
- **Nominal** variable may be **binary (dichotomous) or multinomial.**
- **Interval** scale **includes temperature, birth data.**
- **Independent** variable is an **exposure** variable.
- **Dependent** variable is an **outcome** variable
- **Intervening** variable is a **confounder** variable.
- **Extraneous** variable (**not intended** by the study but can affect changes of the dependent variable).
- **Active variable : can be manipulated** (e.g. No. of cigarette causing lung cancer).
- **Attribute : can't be manipulated** (e.g. old age related to lung cancer).

Examples

◈ **Blood pressure** is ..... variable.

◈ **ABO grouping** is ..... variable.

◈ **Serial number** is ..... variable.

◈ **Ethnic group** is ..... variable.

◈ **Marital status** (single – married – divorced) is ..... variable

◈ **Satisfaction types** (very dissatisfied – dissatisfied – satisfied – very satisfied) is .....

◈ **Satisfaction types** (dissatisfied – satisfied –) is .....

◈ **Social level (low – average – high)** is ..... variable.

Section-5

Organization and presentation of data

⊙ **Methods of communicating and displaying analyzed data:**

① Text. ② Tables.

③ Graphs. ④Numerical methods (statistical measures).

⊙ Text the most common method of communication in both quantitative and qualitative research studies and, perhaps, the only method in the latter.

⊙ Other than text, tables are the most common method of presenting analyzed data.

⊙ **Parts of table:**

① Title. ② Stub :

③ Column headings. ④ Body.

⑤ Supplementary notes or footnotes.

⊙ **Types of tables:** Depending on the number of variables.

① Univariate (frequency tables) containing information about one variable.

② Bivariate (cross-tabulations) containing information about two variables.

③ Polyvariate or multivariate containing information about more than two variables

⊙ **The main characteristics of tables include:**

① Title: short, comprehensive, no abbreviations.

② Number: enumerated

③ Suitable number of rows & columns

④ Title for each column or row

⑤ Should include the statistical analysis of its contents.

⑥ Easy to interpret (self explanatory)

⊙ **There are four types of footnotes:**

① Source notes.

② Other general notes.

③ Notes on specific parts of the table.

④ Notes on the level of probability.

⊙ Source should be identified at the bottom of table & labeled by the word "Source".

③ Graphs

⊙ **If qualitative data:** Pie chart or Columns & bars.

⊙ **If quantitative data:** Histogram - Frequency polygon - Line graph.

Different types of graphical presentation

① Pie chart:

☑ The pie chart is a circle.

☑ It is divided into sections in proportion to the size of each subcategory.

☑ The proportions are shown either as absolute numbers or as percentages.

② Bar chart:

☑ Bar chart is used for displaying qualitative (categorical) variables.

☑ Bar chart is used for variables measured on nominal or ordinal scales.

☑ The discrete categories are usually displayed along the x-axis & the number or percentage of respondents on the y-axis. However, it is possible to display the discrete categories along the y-axis (horizontal bar chart).

⊙ A bar chart is identical to a histogram, except that in a bar chart the columns are spaced, thus indicating that the data is categorical.

⊙ Types of bar chart :

① Simple bar chart.
② Horizontal bar chart.
③ Clustered bar chart.
④ Stacked bar chart

Stacked bar chart :

A stacked bar chart is similar to a bar chart except that in the former each bar shows information about two or more variables stacked onto each other vertically.

③ Histogram:

☑ A histogram consists of a series of rectangles drawn next to each other without any space between them, each representing the frequency of a category or subcategory.

☑ Height of rectangles is in proportion to the frequency they represent.

☑ The height of the rectangles may represent the absolute or frequency or the percentage of the total.

☑ As mentioned, a histogram can be drawn for both categorical & continuous variables.

☑ When interpreting a histogram you need to take into account whether it is representing categorical or continuous variables.

④ Frequency polygon:

☑ The frequency polygon is very similar to a histogram.

⑤ Line graph: It is suited for displaying amount of change in a continuous variable over time on the horizontal axis

⑥ Scatter plot:

☑ It shows how one variable changes in relation to a change in the other variable.

☑ You cannot develop a scattergram for categorical variables.

☑ Both the variables must be measured either on interval or ratio scales.

☑ You cannot develop a scattergram for categorical variables.

⑦ Stem-and-leaf display:

☑ It is an effective, quick & simple way of displaying a frequency distribution.

☑ The stem-and-leaf diagram for a frequency distribution running into two digits.

☑ Note that the stem-and-leaf display does not use grouped data but absolute frequencies.

Section 6

How to comment on tables and graphs

⊙ First write this table or graph shows……

⊙ Then try to comment on the most important thing in your table or graph (for example: the highest or lowest percent or the item related to your topic)

ملاحظات عامة

⊙ **When writing a conclusion:**

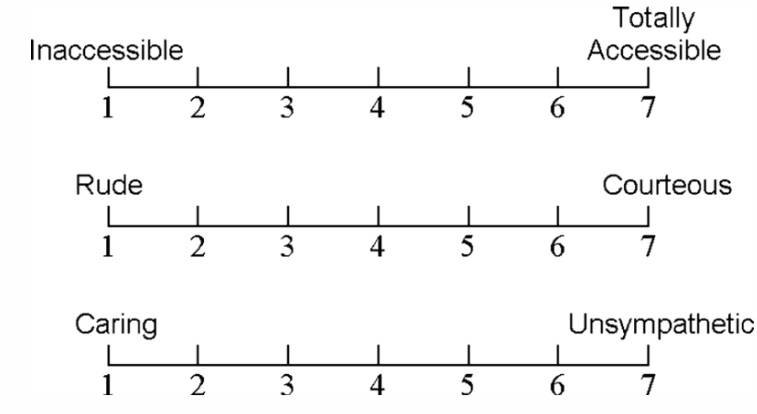
☑ It can be written as a paragraph or in not more than 4-5 points.

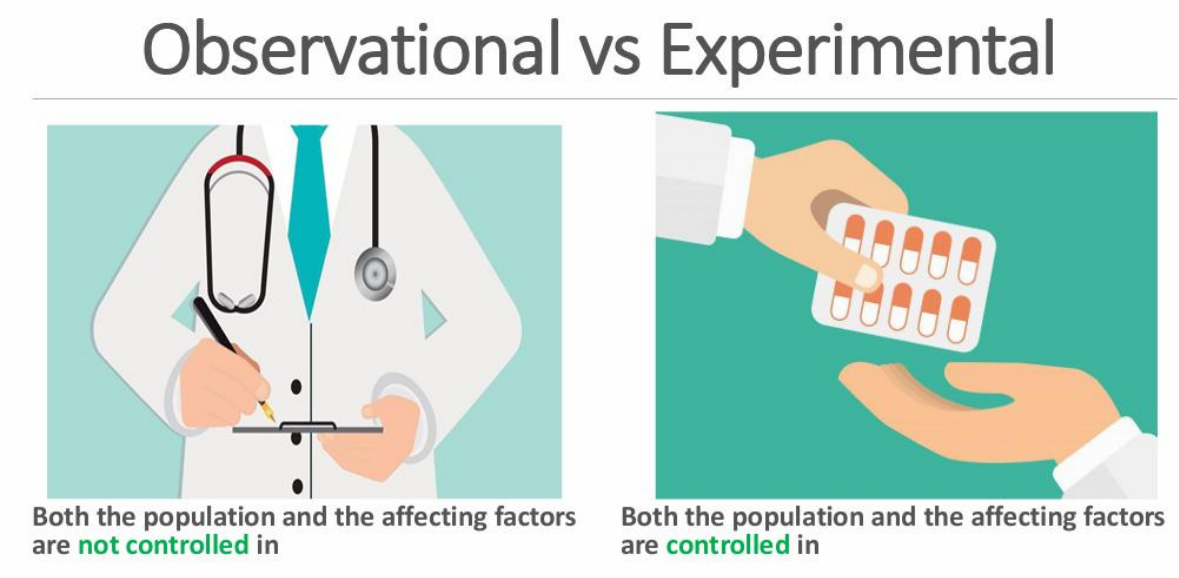
☑ Don't use percent.

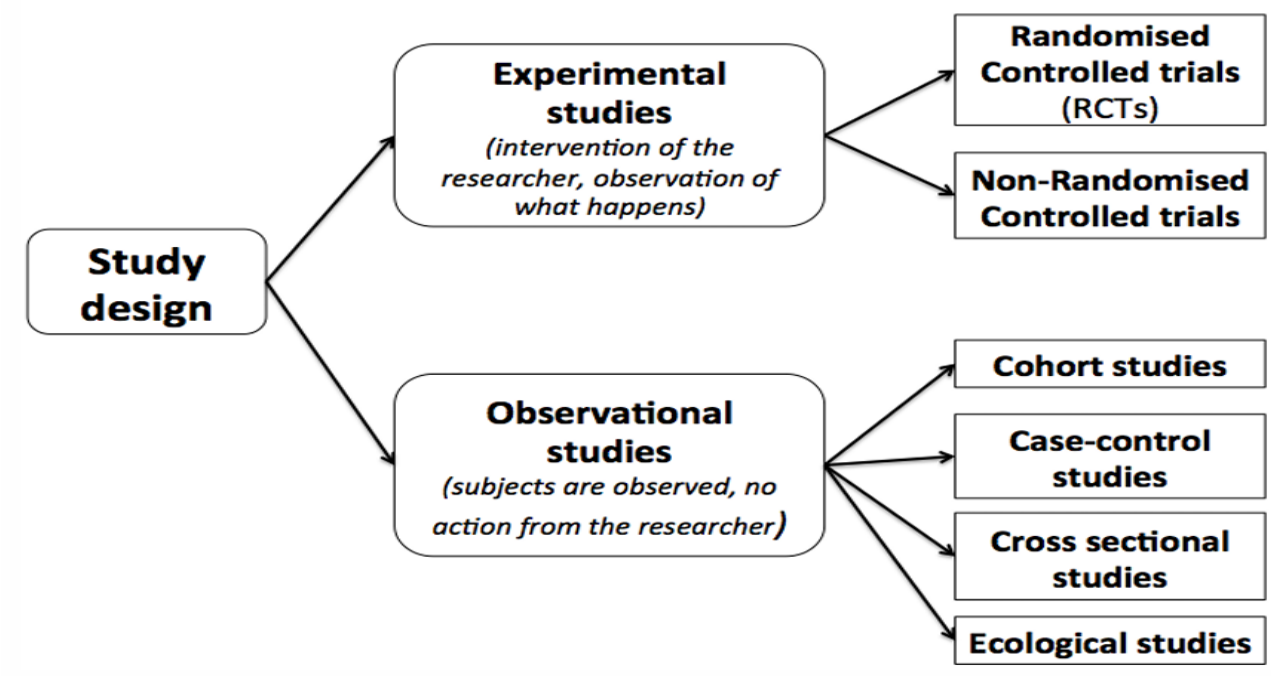
صور زيادة من المنهج كله ومهمة جدا

Likert scale (chapter ⑨ page 93)

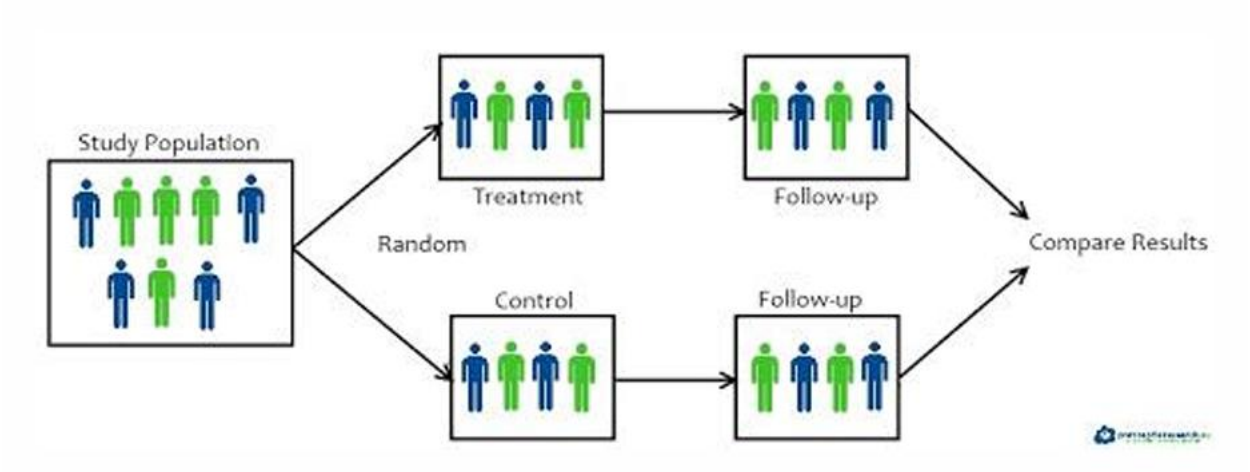
Semantic scale (42 من زيبادات المحاضرات والتفاصيل فى هذا الورق صفخة)

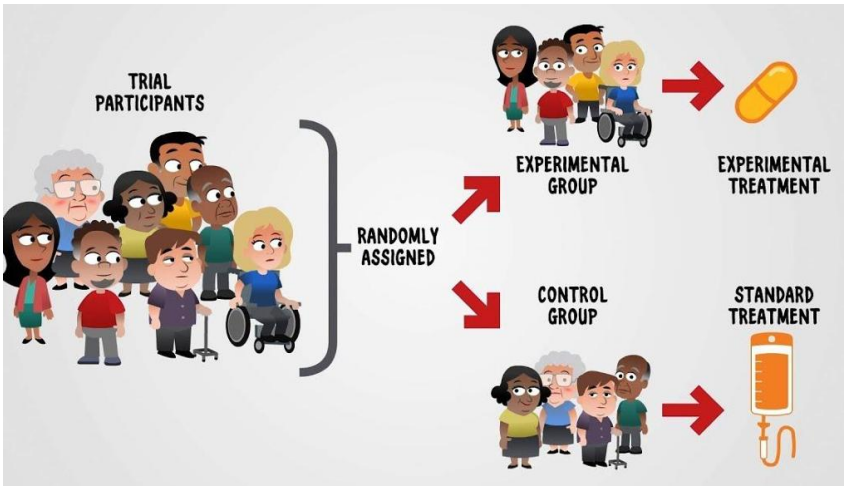




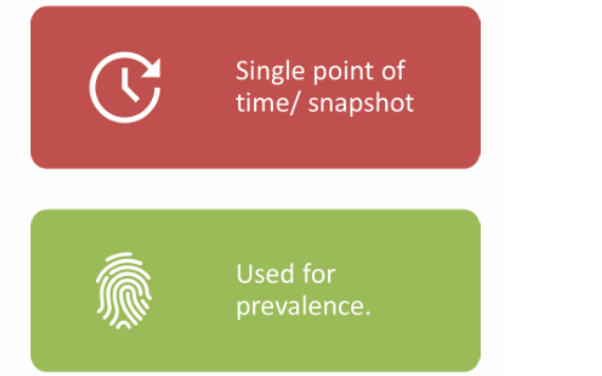


Randomized Controlled Trial

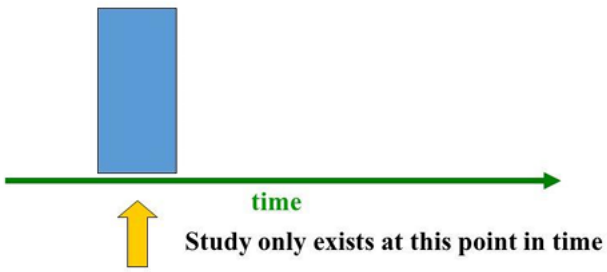




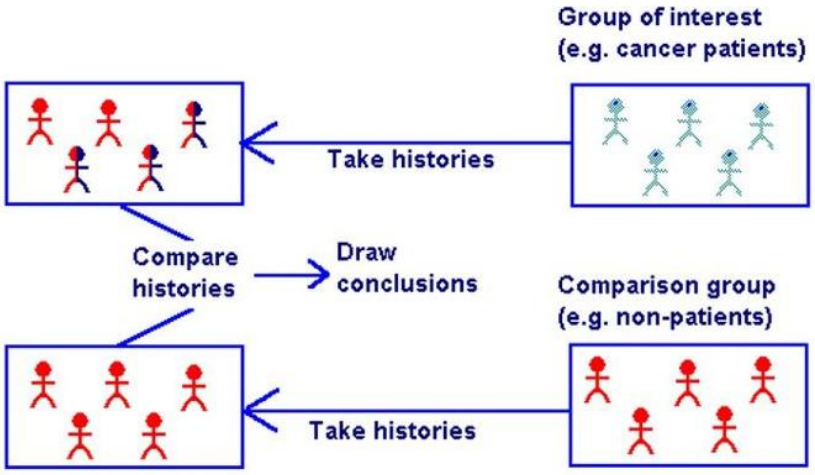
Cross-sectional study



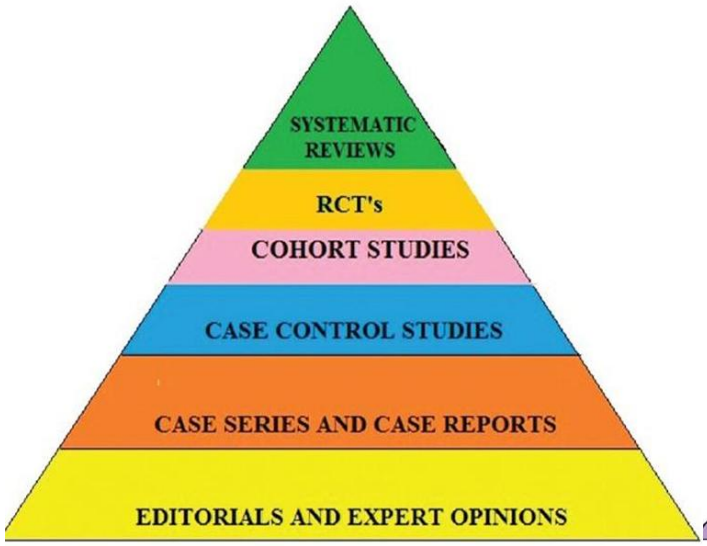
- **An "observational" design that surveys exposures and disease status at a single point in time (simultaneously) in a defined population)**

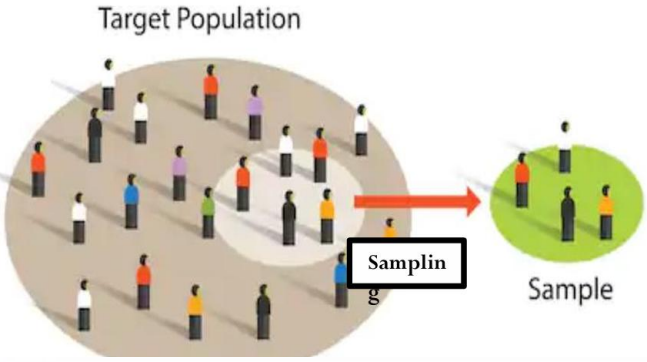


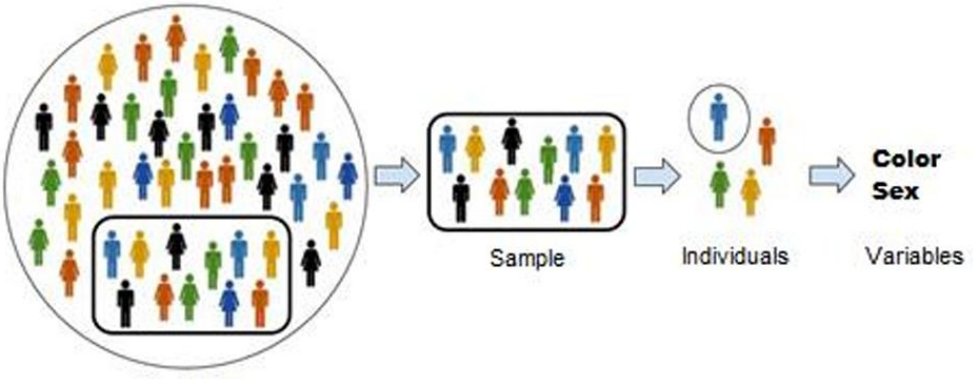
Case-control study

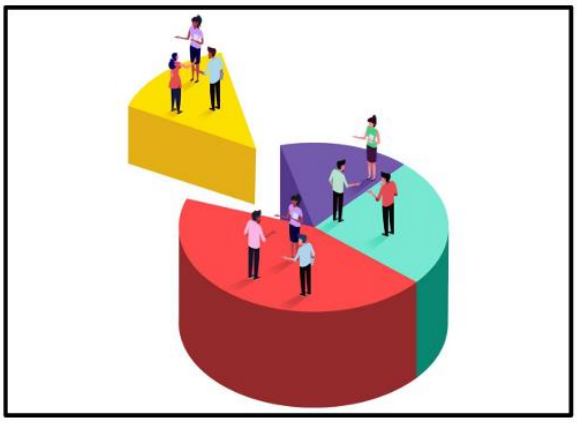


⊙ **What is the best use of case-control study?** سؤال مهم جدا









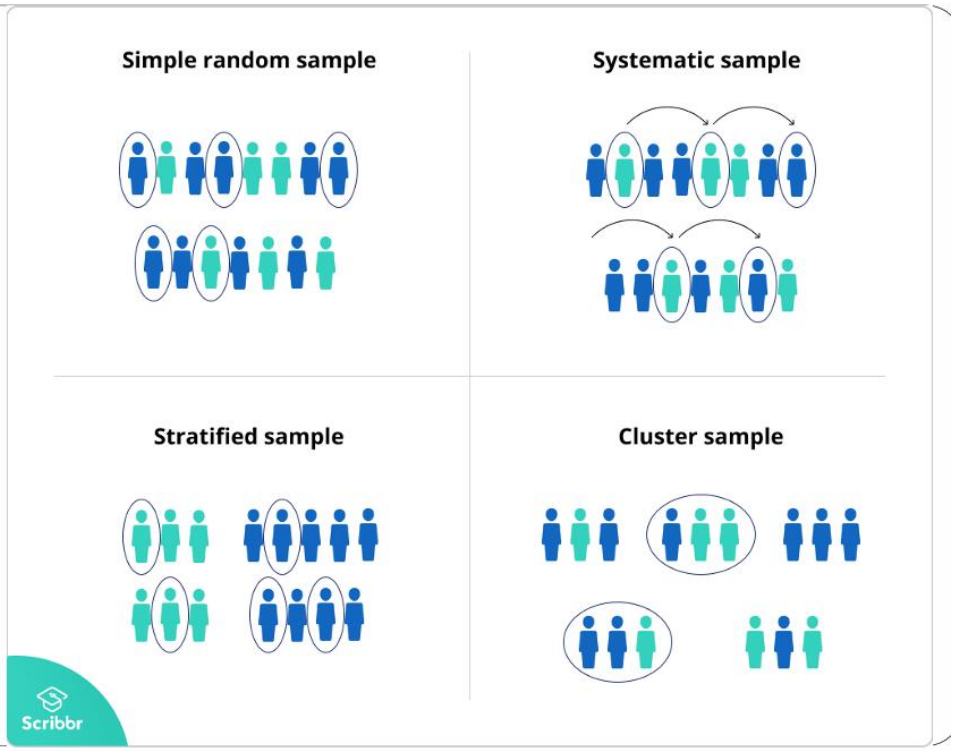
Type of Sampling:

Probability (non-convenient) sampling

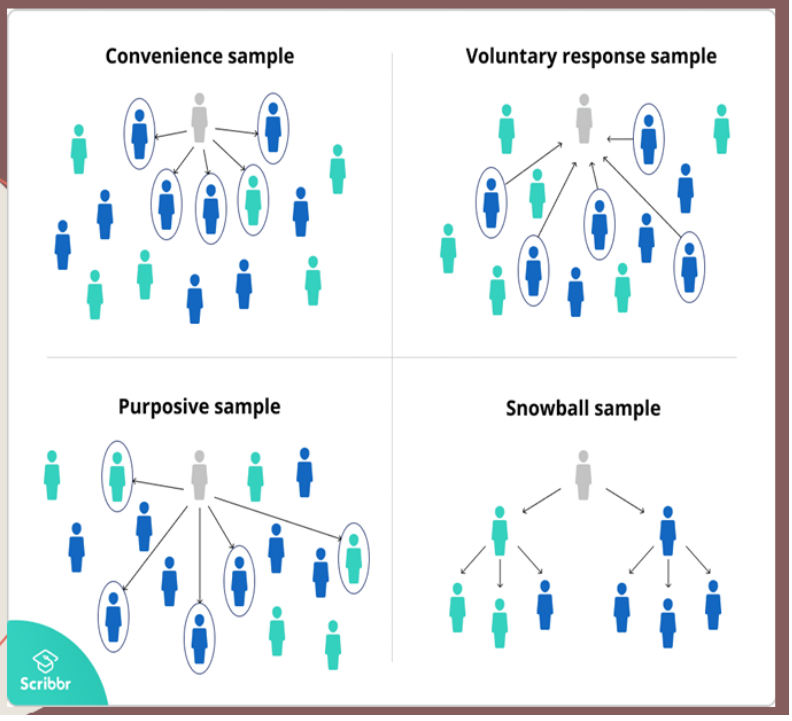
&

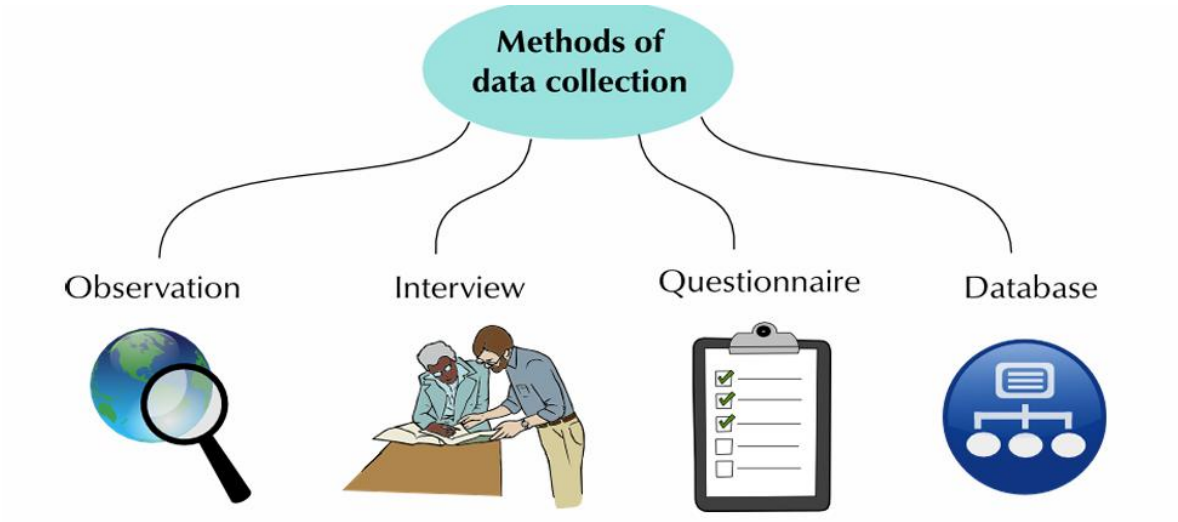
Non-probability (convenient) sampling

Probability sampling



Non-probability Sampling





What are different types of data collection?

Questionnaire

QUESTIONNAIRE

Name- _____ **Gender** _____ **Age** _____

Education qualification _____ **Name of institute** _____

NOTE: - Please tick (✔) against the option.

I. Are you aware of choice base credit system? (Yes/No)

II. In your opinion, will CBCS bring better prospectus in Education system? (Yes/No)

III. Are you satisfied with the introduction of CBCS at Under Graduation level students?

Strongly satisfied ☐ Satisfied ☐ Neutral ☐

Dissatisfied ☐ strongly dissatisfied ☐

IV. In your opinion, shifting to CBCS at Under Graduation level will bring qualitative changes in higher education? (Yes/No)

V. In your opinion, what are the issues/challenges in higher education in order to implement CBCS at University level?

a) Infrastructure ☐ c) Syllabus ☐

b) Staff ☐ d)all of the above ☐

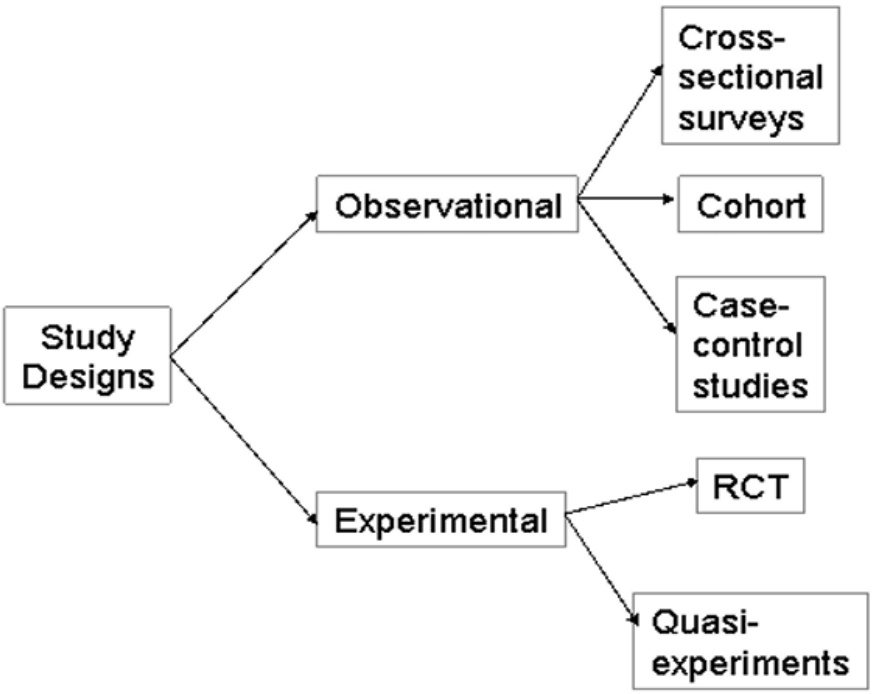
VI. Do you get results well on time? (Yes/No)

VII. Do you agree that your subject curriculum/ syllabus updated according to the needs of the market?

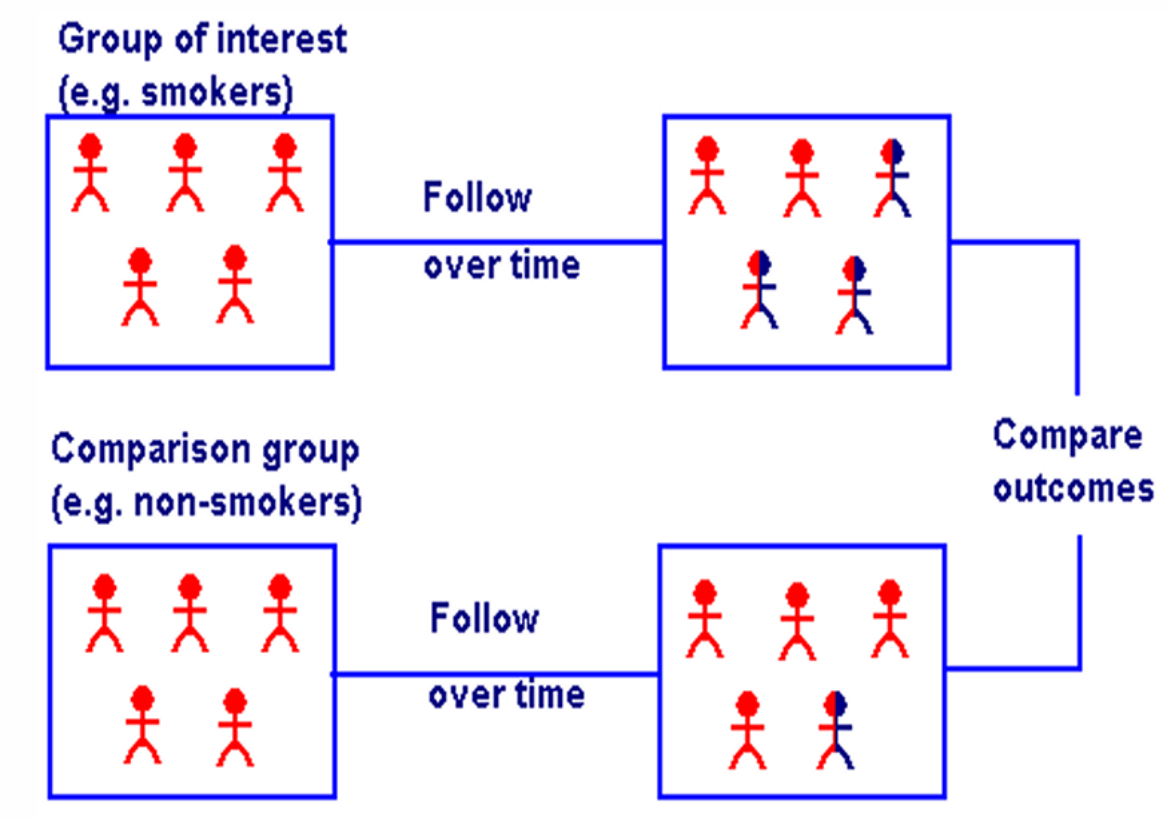
Strongly Agree ☐ Agree ☐ Disagree ☐ Others ☐

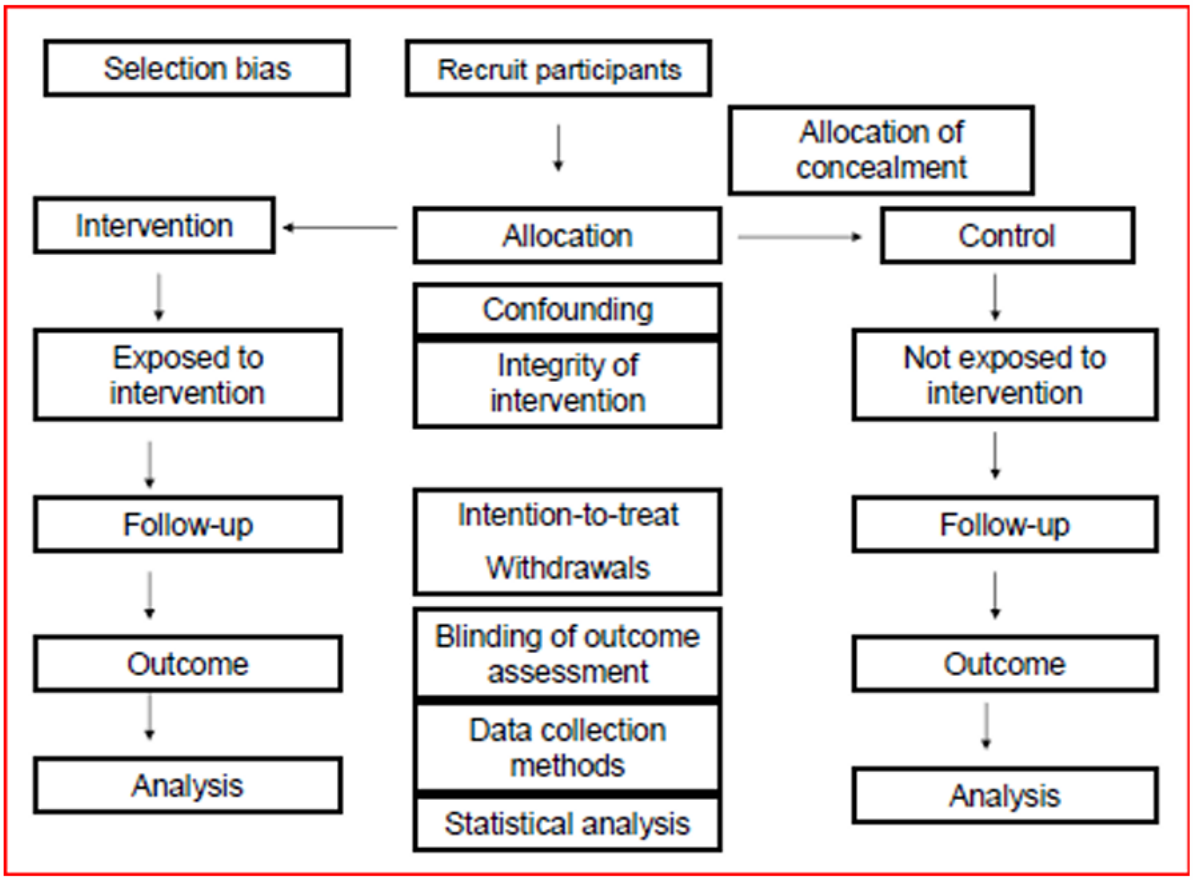
Observational checklist

V.a. Hand Hygiene		
	Elements to be assessed	**Assessment**
A.	All HCP are educated regarding appropriate indications for hand hygiene: i. Upon hire, prior to provision of care ii. Annually	○ Yes ○ No ○ Yes ○ No
B.	HCP are required to demonstrate competency with hand hygiene following each training	○ Yes ○ No
C.	Facility routinely audits (monitors and documents) adherence to hand hygiene.	○ Yes ○ No
D.	Facility provides feedback from audits to personnel regarding their hand hygiene performance.	○ Yes ○ No
E.	Hand hygiene policies promote preferential use of alcohol-based hand rub (ABHR) over soap and water in most clinical situations. *Note: Soap and water should be used when hands are visibly soiled (e.g., blood, body fluids) and is also preferred after caring for a patient with known or suspected C. difficile or norovirus during an outbreak.*	○ Yes ○ No



Advantages	Disadvantages
Quick; can cover whole population, giving representative information whether or not people are seeking care	Based mainly on self-report (biases?); diagnostic information usually inaccurate; can't establish causal sequence
Prospective, so can establish causal sequence; can estimate incidence	Time-consuming; costly; attrition of cohort?
Relatively cheap way of focusing on causal factors	Requires recall of past events (inaccurate?); controls not equivalent to cases
Controls for all main forms of bias; good for both etiological and evaluative research	Ethical concerns in etiological applications; Often uses selected populations: issue of generalizability?
May be more practical than RCT: can use "natural experiments"	Allocation bias often significant (exp'tal and control groups not equivalent)





Category/ Examples of Category	Soundness of Evidence-Based Approach	Comprehensiveness	Ease of Use and Availability/Cost
Textbook-like Resources (Systems)			
Clinical evidence	Strong	Only therapy; mainly primary care	Easy to use; available Paid
PIER	Strong	Mostly therapy; mainly primary care and internal medicine	Easy to use; available Paid
UpToDate	Moderate	Most clinical areas, especially internal medicine, and primary care	Easy to use, Paid
DynaMed	Strong	More than 2000 disease summaries presented in standard formats for primary-care physicians	Easy to use; Paid but free if you help in the development
Merck Manual	Weak	Covers most clinical areas	Easy to use; free

Category/Examples of Categories	Comprehensiveness	Ease of Use/Availability
Systematic Reviews and Guidelines (Syntheses)		
Systematic reviews	Reviews of use in clinical care are often limited in scope; therefore, one needs to be able to quickly identify whether a relevant article exists	Hard to find and then even harder to get in full text; also need some work to apply the information in the review for clinical care
US National Guidelines Clearinghouse	Comprehensive coverage of the USA and many other nations' guidelines; often several guidelines on the same topic	Easy to search; one of the strengths of the site is being able to "compare" guidelines on the same topic; free; many full-text guidelines available
Cochrane Database of Systematic Reviews	Covers broad range of disciplines; limited to therapy and prevention	Easy to find a Cochrane review but sometimes difficult to apply it is not free but abstracts free; included in many composite resources such as Ovid